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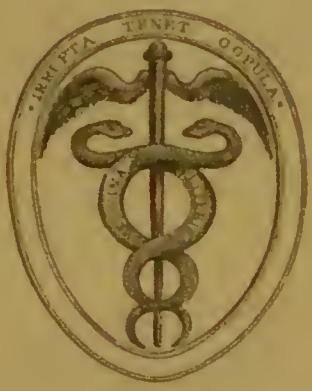

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SIR,

I have very great pleasure in dedicating the following pages to you, my earliest Instructor in Anatomy and Surgery, as a small token of the high sense I entertain of your talents and worth.

I feel greatly honoured in having the sanction of your name to introduce to the notice of my Professional Brethren, these observations upon a class of diseases of no ordinary interest and importance.

That you may long live to confer still greater benefits on our profession, by advancing the interests of science, and diminishing the sufferings of your fellow-creatures, is the warmest wish of,

SIR,

Your most faithful friend and servant,

JOHN CHARLES HALL.

PREFACE.

The title of this volume is selected as the one most expressive of its contents. The remarks offered in each Chapter, are the result of experience at the *bedside of the patient;* and I may, perhaps, be here permitted to repeat the fears of Dr. Graves—that the modern attention to the collateral sciences—chymistry, electricity, magnetism, microscopic investigation, &c., have a tendency to withdraw the attention of the student too much from the main object—Clinical Observation.

During a period of some years, an outline of many of the chapters of which this work is composed, has appeared in the London Medical Gazette; since they were written I have had many opportunities of testing the opinions expressed, by the standard of experience, and now venture to re-publish them in a separate form, with considerable additions, after the favourable opinion expressed of some of them, by the leading Medical Publications of the day (including the Medico-Chirurgical Review), in the hope that they may be instructive to the student, and not without utility to the members of that profession to which I have the honor to belong.

Grove Street, East Retford,
May 12th, 1843.

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CORRIGENDA

Page 56, line 26—*for* "I pointed out," *read* "it is my impression that I pointed out."

Page 114, line 4—*for* "antiphologistic... *read* "antiphlogistic."

—— 200, —— 2—*for* "messuage." *read* "message."

—— 202, —— 9—*read* "*honest*."

—— 205, —— 8—*for* "textures," *read* "texture."

—— 206, —— 21—*for* "aperients and sudorifics," *read* "water and alkalies."

—— 208, —— 30—*for* "every first sense." *read* "every just sense."

—— 214, —— 33—*for* "and have perhaps," *read* "and spirits have perhaps sometimes."

Index—*for* "Lacrymalis" *read* "Lachrymalis."

CHAPTER I.

ON CERTAIN DISEASES OF THE EYE.

INTRODUCTION.

THE eye exhibits greater variety in structure, more beauty of arrangement and delicacy of organization, than any other part or organ of the body. The loss of vision being, perhaps, the greatest affliction to which the human body is liable, the investigation of diseases of the eye becomes, therefore, at once both interesting and important. In consequence of the very superficial situation of some of its textures and the transparency of others, an opportunity is frequently afforded, of observing the various changes, produced by disease, in truth of actually seeing the morbid process, of witnessing the origin, progress, and termination of diseased action in the more important structures: of learning how disease is modified in them by internal and external circumstances, and of watching the effects of the remedies employed.

Thus, by careful observation, an accurate knowledge is obtained of the symptoms, nature and termination, as well as of the degrees, and various forms of morbid action, which arise in each particular structure. But the knowledge thus acquired is not limited to diseased conditions of the eye, it can be used most advantageously, in assisting the diagnosis of diseases in other organs, where a like structure exists, but which are concealed from view; and lastly, by seeing the effect of remedies used in the cure of various morbid conditions of the eye, much practical, and highly important information, relative to the treatment of diseases in other parts of the body, may be obtained. But there are other diseases of the eye, and indeed some of its most important ones, which cannot be thus distinguished, in the investigation

of which, a mere inspection of the diseased organ affords scarcely any useful information; for they are not distinctly indicated by any outward and visible signs of morbid action, but are very obscure in their symptoms, and at the same time rapidly destructive in their progress; yet, unless early detected, and most promptly treated, they will attain, in, by far the greater number of cases, that degree of establishment over which we can exert no influence. It may also be remarked that they differ not only in degree but also in their situation, and of course require different modes of treatment. To find out therefore the amount of disease, as well as the texture more particularly attacked, at our first examination, affords in many instances the only chance of preventing the loss of vision. It is needless to add more in proof of the absolute necessity of early and most attentive investigation, of accurate diagnosis, *and prompt and decisive treatment.* In the *management* of acute inflammation of the eye it must ever be remembered that it is highly important to arrest its progress at an early stage of its existence, on account of its tendency to terminate in opaque deposition and to destroy the transparency of its pellucid textures.

These remarks do not apply to inflammation of the transparent structures, and internal parts of the eye only; neglected and chronic inflammations of the conjunctiva are liable to induce equally injurious effects upon vision; for instance, if the equality of the conjunctive membrane be destroyed; if this beautifully smooth and polished surface become rough and covered with granulations,—thickening, opacity, and vascularity of the surface of the cornea, or, more precisely of the membrane reflected over its first layer, is certain to follow. The effects therefore of inflammation which cause little or no injury to other organs, are prone to destroy, or seriously impair, the function of the eye.

In a work like this it is quite impossible to enter into a minute examination of the anatomy of the eye, still I would urge that the morbid affections of this organ are numerous; and that as they frequently commence, and advance very insidiously, an accurate diagnosis is of the very highest importance, and this, it is quite impossible to form, without a perfect knowledge of the anatomy of the eye.

Nor must this knowledge be limited to the eye only, it must embrace the whole body; a careful study of diseases of this organ

makes clear and distinct the influence of other parts upon it, whether nearly or remotely connected, and proves, moreover, the necessity of the most patient investigation of the whole system, before we presume to enter upon the treatment of disease, however simple it may appear to be; for as Mr. TYRRELL well observes (in his admirable work on the eye) "a disease which seems on superficial view, to be purely local, is frequently not so; but perhaps is connected with some distant disturbance; very few of the opthalmic affections are purely local; and by far the most serious and destructive forms of morbid action in the eye, are depending upon, or influenced materially by, derangement in other organs, or in the system generally; so it is with other parts or organs of the body."

In days gone by the management of diseases of the eye was in a great measure, left to men who styled themselves OCULISTS, and who endeavoured to impress upon their patients the idea of the utility and advantage of a practice so convenient and profitable to themselves. There can be no greater folly than to suppose that diseases of the eye belong exclusively to the mere *oculist*, if I interpret this title correctly, when I suppose it to mean, a person competent to treat the various diseases of the eye, without any, or at the utmost, a very imperfect acquaintance with general anatomy, pathology and therapeutics, then it may be said that such a person does not exist. But I will not express this opinion without supporting it by competent authority; my friend Mr. MIDDLEMORE of Birmingham, in his lectures, remarks, that "he only can be competent to the treatment of disease, in whatever part it may be situated, who is conversant with the natural structure of parts, with the laws which regulate the healthy functions, and with the derangement and alterations produced by the encroachments of disease—with the sympathies, the influences, and the connections subsisting between every part of the animated machine. If however, *in defiance of common sense*, you do attempt to disconnect the study of diseases of the eye, from the cultivation of the other branches of the profession: if you isolate, as it were, the pathology of the eye, and affect to study its diseases for the purpose of becoming *mere oculists*, you must inevitably fail in your attempts to obtain even an approach to a sound and perfect acquaintance with them." Mr. LAWRENCE also, referring to the human body,

observes, "in such a system then of intricate connexion and mutual influence, each part will be best understood by him who has the clearest notions of the general economy. Even the practical treatment is most judiciously conducted by those who are in the habit of treating disease generally; who do not confine their attention to the part. This confinement is prejudicial, by producing and confirming habits of partial and narrow views, by leading to neglect of mutual relations and influences, by encouraging local treatment. Exclusive attention to a small corner of the animal structure, causes a confinement of mental vision, analogous to the near-sightedness which mechanics contract by constantly poring over the minute objects of their attention. All the habits of the *oculist* lead to a separation and insulation of the organ. The part is detached from the system, *treated by washes, drops, ointments;* and this inefficient trifling impedes the progress of opthalmic surgery. We want, instead of this, general and comprehensive views, the aid of analogy and contrast; the whole field of *medicine and surgery* must be laid under contribution, for the principles which are to guide us in learning the nature and treatment of opthalmic disease."

It is foolish to attempt to separate the study of diseases of the eye from that of other organs of the body, for although attempts have been made to insinuate that a good knowledge of diseases of the eye and a due acquaintance with the various other branches of the medical profession were incompatible, and that the former could only be obtained at the cost of the latter; if this be true, the rule which applies to every other class of knowledge, and which admits that the possession of one kind of information, is a ladder which enables us to climb to the attainment of another, must here be reversed and that in fact a good opthalmologist must needs be a very bad practitioner.—"Such statements can only be regarded," says Mr. Middlemore, "as the product of ignorance, or the result of selfishness or ill-nature, or as proceeding from motives of a still more worthless and questionable character."

It is a lamentable fact, yet nevertheless a true one, that the study of diseases of the eye forms a very small portion of the time devoted to the education of a medical student, the short space in which too many are compelled to obtain their professional education renders it quite impossible that many hours can be devoted

to diseases of this important organ, and the little knowledge he obtains is for the most part that, which is to be gained from the few lectures devoted to the eye in the usual surgical course. Still from whatever cause it may arise, ignorance upon this subject must be acknowledged to be an evil, which in its consequences, may be ruinous to the medical practitioner, and most fearful as respects his patients. Once more let me quote the words of Mr. Middlemore, whose valuable work on diseases of the eye proves that the facts he has there collected could only have been obtained by diligent reading, the greatest possible labour, and an unusually ample sphere of observation.

"If," says he, "ignorance of opthalmic disease on the part of a surgeon prevent him from averting the injurious effects of acute deep-seated inflammation of the eye, the evil is sufficiently great and the misfortune painfully severe, even if the subject of the injury happen to be wealthy, yet, in such case, the calamity, distressingly acute though it be, is generally mainly confined to the unfortunate patient, but, in the event of some contagious or epidemic opthalmic disease, becoming extensively prevalent, a want of knowledge on the part of the practitioner may become a source of immense injury to society, by securing the loss of vision to many of its poorer members, who, whatever may be their youth, and health, and vigour, are thus permanently thrown—absolutely and entirely cast—upon the benevolence of the community." [page 37.]

I must leave it to the records of our profession to prove whether or not this is an exaggerated account of the evils that now and then result from an imperfect acquaintance with the management of diseases of the eye, on the part of medical practitioners, who have been unexpectedly summoned to conduct their management, when such diseases have been more than usually prevalent.

These remarks have been written in the hope of directing the attention of the student to a minute examination of diseases of the eye; their proper treatment, the varieties they assume, the complications they exhibit, can only be learnt from the book of nature, still a very careful perusal of the works, of Wardrop, Lawrence, Middlemore, Travers, Guthrie, Mackenzie, and Tyrrell, will much assist him in the prosecution of his study of these important diseases. If a more attentive study of opthalmic surgery is in-

tended, the writings of Saunders, Wenzel, Demons, Cooper, Himley, Jaeger, Langenbeck, Prochaska, Weller, Graef, Rust, Walther, Hosp, Backhausen, Jacobson, Juengken, Baerens, Ammon and Clemens will convey every information.

GENERAL REMARKS ON THE TREATMENT OF INFLAMMATION.

In every case of inflammation, be it of the eye or any other organ, the first indication is the removal of the exciting cause. If an attack of phlegmonous inflammation were produced by the irritation of a splinter, we should of our own accord, at once, proceed to remove it. Again, if a piece of iron were to penetrate the cornea and an attack of inflammation followed, the largest possible extraction of blood would not cure the patient, although it might mitigate for a time his sufferings. I remember a case in which an acute attack of iritis was induced by a blow from a stick in passing through a thorn fence. When this man came to me he had been treated by purgatives and the application of four leeches; he was ordered to be bled and to take calomel and opium; this checked the disease, but it did not cure it; it went on for several days, and at length on a very minute examination, the smallest portion of thorn was found sticking in the cornea; this was removed and the man recovered. This case affords a useful lesson, and teaches the necessity of the most careful examination, in every disease of the eye, in order that the exciting cause may be discovered and removed. But although the removal of the exciting cause is a very important step towards the removal of the disease, something more is required; the exciting cause may only have been applied for a moment, and yet the most intense inflammation may follow; hence, in addition to taking away the remote cause, whenever we have the power of doing so, it is proper to moderate by other means, the increased action of the larger arteries, and thus to lessen the rapidity of the blood's motion towards the inflamed part.

Again, the same disease in all cases does not require similar treatment. If called upon to treat a patient for acute inflammation of the conjunctiva, the attention must first be directed to the size, strength, age, occupation, habits of life, and other peculiarities of the individual. No one would dream of treating a strong ple-

thoric black-smith, and a young puny girl in the same manner, for that active treatment which would be absolutely necessary in the former, would in all probability destroy the latter, and the means which would probably be quite sufficient to subdue an attack of inflammation in the latter, would from its mildness scarcely take any effect upon the former.

The most careful attention will ever be required in the investigation of these cases, and the detection and removal of some gastric, uterine or intestinal affection, will often restore the healthy functions of the inflamed eye without the application of any local remedy.

But to return to the black-smith. We will suppose such a man attacked with acute inflammation of the eye; that he is seen as soon as possible after the commencement of the attack, and before any of the more important, and deeper-seated parts are affected—we of course bleed him largely, and repeat it in six or eight hours if required; the next day leeches may perhaps be necessary, and after this a blister to the back of the neck. At the same time warm or cold water must be constantly applied to the eye, the feelings of the patient dictating which of the two is most agreeable. Cold or warm water is the only local application necessary, and the one found most useful after a considerable experience in diseases of the eye. It will also be necessary to produce a free evacuation from the bowels, and if there is violent pain some calomel and opium must be given at bed time, and a little extract of belladonna rubbed upon the eye-brow. If these measures arrest the progress of the disease, in a few days, a weak solution of nitrate of silver, or sulphate of zinc, may be used, but these local applications are not always necessary.

It may be said that there is nothing new in this plan of treatment, this is perfectly true; it may be objected that it is very simple, but it is not to be despised on that account. The disease is a simple one, let the remedies be simple also, and in by far the greater number of cases this simple treatment will remove it.

It has already been remarked that inflammation of the eye is not always stationary, and that when one part is attacked, other structures also are liable to become affected; it is therefore very necessary to arrest its progress, and when once subdued, to prevent a recurrence of it. After the employment of the

active remedies necessary to remove an attack of acute inflammation of the conjunctiva, particular attention must be paid to the secretions; the diet must be simple, and wine, beer, spirits, and all stimulating drinks made to give place to water. The eyes must not be much exercised; they may be either protected by a green shade, or what is perhaps better, by a bit of linen which can be fastened round the head with a ribband, and moistened with cold water; the room must also be partially darkened.

CHEMOSIS.

Inflammation of the conjunctiva is to a certain extent connected with chemosis, in as much as it frequently produces inflammation of the cellular membrane beneath, which is forced up by the effusion, such inflammation induces: in addition to this the enlargement of its vessels, and deposition within its texture assist in producing the chemotic swelling. *"Chemosis is of two kinds, the active inflammatory, and the mild inflammatory, or the lymphatic and the œdematous chemosis." The former is its severest form and occurs in strong subjects, and may be distinguished by its unyielding character and the greater degree of uneasiness it produces. On minute examination it is found to consist chiefly of enlarged blood-vessels, and effused lymph. The other form of the disease attacks feeble persons, or occurs in connexion with some milder degree of inflammation of the conjunctiva; it is coarse and flabby in its texture, and extends generally so far over the cornea as nearly to exclude it altogether. The *treatment* of *chemosis* after the means already pointed out for the removal of inflammation, of which it is frequently a sequel, will consist in the application of leeches just above the eye brow, the employment of a solution of nitrate of silver, alum, or sulphate of zinc, and the free scarification of the swollen parts.

The treatment of acute inflammation of the conjunctiva, where the symptoms are severe, consists therefore,

I. In the removal of the exciting cause.

II. To lessen the general plethora of the system.

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* Middlemore, page 60.

III. To apply such local remedies as have a tendency to remove the excessive vascularity of the affected part.

IV. To attend particularly to the state of the *alimentary canal*, and to endeavour to rectify any other functional derangement.

V. To employ counter irritation.

VI. To remove the heat of the eye by the application of cold water.

VII. To promote the contraction of the enlarged vessels by stimulants, or astringents.

VIII. To protect the weakened organ from the influence of vivid light.

Having now directed our attention to the treatment of acute inflammation of the conjunctiva it may be necessary to examine more minutely the various remedial agents employed in the removal of acute, and chronic inflammation, of the several parts entering into the formation of the eye.

SOME OF THE MORE IMPORTANT REMEDIES EMPLOYED IN THE TREATMENT OF OCULAR INFLAMMATION.

Bleeding.—This is the most powerful, and important of all the agents employed for the subduction of ocular inflammation. In proportion to the power of a remedy should be the caution we exercise in the employment of it, and this can only be acquired by careful observation and extensive practice. In fact the art of medicine is to be perfected I conceive, by improvements in our knowledge of the nature of diseases, by improvements in diagnosis, and by improvements in our acquaintance with remedies and their application.

In the treatment of all acute inflammations of the eye one of the chief points is, to lessen as soon as possible the vascular fulness of the system; there are many reasons why bleeding from the arm is to be selected as the most desirable mode of extracting blood, and this more particularly when a considerable quantity is required. If we open the jugular vein the patient is much annoyed by his constrained posture, during the operation; if the temporal artery is opened, it is not quite certain that a sufficient quantity

can be obtained, and it frequently happens that when as much blood is taken as you think requisite, the hemorrhage can only be restrained by very tight bandages, which are both uncomfortable and heating to the head of the patient. There is also another objection to this mode of extracting blood; it often occurs that when the temporal artery has been opened in an attack of acute opthalmic inflammation, the neighbouring branches become enlarged and assume hemorrhagic action; this is also the case in other parts of the body, when the current of blood has been suddenly stopped from pursuing its usual course. This is a fact clearly proved and very forcibly illustrated in the surgical lectures of Mr. WARDROP. But a case may occur where the patient is unusually corpulent;—the veins of the arm may be very thin and obscure, or a great dislike manifested to be bled from the arm; cupping is the next best means of withdrawing blood, and in a certain stage of the disease combines not only the influence of depletion, but also of counter irritation in the range of its effects.

The advantages of bleeding from the arm are many—it is convenient both to the patient and the surgeon, the hemorrhage can be restrained in a moment, and if properly performed, this operation will enable us to obtain any quantity we think proper, and there is no necessity for a tight and uncomfortable bandage in the immediate vicinity of the inflamed organ.

The next question necessary to decide, is the quantity of blood that ought to be taken in an attack of acute inflammation of the eye. It is quite impossible to fix any general rule; my own experience induces me to advise that the opening should be very large, and that one very large bleeding should always be resorted to (regulated by the age, sex, and constitution of the individual) in every case of acute inflammation of the eye; small bleedings, daily repeated, are never productive of good, and often do much harm. Mr. MACKENZIE [page 323] remarks, "in taking away blood from the arm in any inflammatory disease of the eye, the opening should be made large so as to ensure, if possible, a considerable effect on the impetus of the circulation. The quantity removed will vary from ten to thirty or forty ounces, according to the constitution of the patient, and the circumstances of the disease." Mr. MIDDLEMORE expresses a similar opinion, and Dr.

Veech contends, that, "the salutary effect of syncope can only be ascribed to the laxity of the vessels rendering them unable to resume their former tone and state of excitement." Mr. Lawrence says, "the quantity of blood to be drawn from the arm must be such as will decidedly influence the circulation. We cannot determine the amount beforehand; we cannot decide that ten, or sixteen ounces will be sufficient. It may be necessary to take twenty, thirty, or forty ounces, or to produce syncope, if you cannot otherwise make the requisite impression, on the vascular system. It is the usual practice in France, Italy, and Germany, to take a small quantity of blood at a time, and to repeat the bleeding frequently; thus venesection is not unfrequently performed night and morning for several successive days. This plan, which is adopted from the fear of injuring the patient by a large bleeding, drains his circulating system almost to the last drop, brings on excessive debility, and is less efficacious in arresting the local disorder." "I have no hesitation in stating, that the object last mentioned is effected much more certainly by a large bleeding in the outset, and that this method accomplishes it at less expense to the constitution. I never saw a person injured by a single large bleeding, performed for an active inflammation; while generally the strength is completely restored in twelve or twenty-four hours, even after bleeding to syncope. On the contrary, weeks and months often elapse before patients who have been drained, by repeated bleedings, recover their strength." A decided impression having been made upon the system by this large bleeding, a second extraction of blood from the arm may not be required. But if, on examination of the affected eye the next day, some traces of inflammation are discovered, although of a less acute character, it will nevertheless be necessary to remove this second or diminished degree of inflammation, by the application of leeches, which should be placed under the lower eye-lid, but at a greater distance from the inflamed eye than they are usually applied. I never advise the application of leeches to the upper lid as they often produce swelling and ecchymosis, it is therefore better to place them upon the forehead, just above the eye-brow, at the side of the nose, or the external angle of the eye; there is little cellular membrane in those situations, and therefore infiltration is not so liable to occur.

Purgatives.—In some cases purgatives are useful for the pur-

pose of correcting the deranged condition of the alimentary canal, and at others are employed to reduce the plenitude of the system. Various medicines are used to effect these various intentions, which it is not necessary to enumerate; it may however be as well to point out their manner of employment in certain inflammatory conditions of the eye. If the attack has followed an obstructed state of the bowels, a full dose of calomel followed by a saline purgative is required; if the disease is mild in its nature, and appears to be induced by a torpid condition of the bowels, a course of mild aperients would be useful, and lastly, free liquid motions should be produced where opthalmia exists in a plethoric subject, whose secretions are always scanty; they will be more particularly required where there is any hydropic tendeney, where the head is affected, or the organs connected with the system of the vena porta—or in cases of dropsical effusion produced by disease of these organs, and where the kidnies refuse to act. They are also required when the body is disordered by morbid matters collected and circulated in the blood, the removal of which can only be obtained by a bold and steady persistence in their employment. The free and adequate use of purgatives is also indicated during the large and long continued discharge of black grumous matters, usually called bile, said to come from the liver, but which are in truth secreted by the glands of the intestines.

However necessary the use of purgatives in certain cases, their employment in this country is by far too common, and the doses in which they are given absurdly large; there is a too general feeling that the bowels should be constantly acted upon, and we cannot wonder that quacks take the most fraudulent advantage of it. One of the greatest abuses undoubtedly consists in the daily use of purgatives; the colon may not be able quickly to evacuate its contents although the food taken into the stomach has been well and sufficiently digested. This state of idleness is not long suffered to continue, and it is goaded on to increased action by a drastic purgative; what follows? the irritation is renewed, and in time the secretion of the whole length of the alimentary canal becomes altered and impaired. The secretions are disordered, and a new excuse found for the employment of purgatives of a still more drastic character which are continued to the injury of health, and not unfrequently to the destruction of life.

It may not be foreign to this division of our subject to remark, that a certain distention of part of this canal is necessary to its healthy condition; this is a point of great importance and one apt to be overlooked, both by the physician and his patient; I am certain that the daily use of purgatives frequently produces fatal irritation, and that both the rectum and colon often suffer from the want of equable and sufficient distention; the result of this is, distention by air, which in addition to the irritation already pointed out, impedes the proper peristaltic motions.

A disordered action of the heart is often increased by the abuse of purgative medicines, and in dyspeptic cases, where their abuse is most common, the nutrition of the body generally suffers; digestion is very imperfectly performed, and the ingesta being hurried forward without the due amount of change and separation taking place, there is usually decay of strength and flesh. This was a fact known to Celsus who writes: "purgationes ut interdum necessariæ sunt, sic, ubi frequentes sunt, periculum afferunt. Assuescit enim non ali corpus; et ob hoc infirmum erit: cum omnibus morbis obnoxia maximè infirmitas erit.

I will only further remark that the evils arising from the abuse of aperients are too often overlooked, and feel certain, that many who have commenced their practice with the idea that large doses of purgative medicines were required in almost every case, more or less alter their opinion, as it becomes more matured by time and experience.

Mercury.—In diseases of the eye mercury may be employed in a variety of ways; as a purgative, as an alterative, and also to excite gradual and slight, or prompt and active ptyalism. It will not be necessary to say much about mercury at present, nor the forms in which it ought to be administered, since it will be requisite to do this, when speaking of the treatment of the various inflammatory actions which arise in the different textures of the organ of vision. I may however remark, that a slight and gradual mercurial influence, is more generally required for the removal of many chronic diseases of the iris, the membrane of the aqueous humor. the hyaloid membrane, the crystalline capsule, the septa of the vitreous humor, the choroid and the retina; while inflammatory conditions of the deeper seated parts, require its more complete and active influence for their removal. In considering

the use of mercurial medicines, one comment I would make is, that in the ordinary use of calomel, as a mercurial, its beneficial effects are often destroyed by mixing it with other purgatives. I do not say that such a combination is not required, where we wish to obtain a very copious and speedy evacuation of the liver and bowels; in such cases the combination is doubtless most useful. but I find that it acts much more beneficially, if given without any such addition, where the mercurial action is desired, either on the different secreting organs, on the mucous membrane of the intestines, or to arrest certain states of inflammation. A modern writer* (whose book will amply repay a very careful examination), speaking of the advantage of giving calomel without the addition of aperients, remarks, "that its combination with purgatives in these cases both obscures and impairs its effects; introducing at the same time causes of irritation which disturb the body in other ways, and thereby check the course of recovery. Even in cases of obstruction of the bowels, when there is threatening of topical inflammation, calomel adequately given without the addition of other laxatives, will often be more effectual for relief than in any combination with them. Its single action is much less irritating in parts thus disposed; while there is generally more distinct and speedy exercise of its specific effect upon membranes already in an inflamed state. As an alterative, the bi-chloride, or oxymuriate of mercury, though doubtless more frequently prescribed than formerly, is not, even yet, used so extensively as it ought. It can be given in solution, which is a considerable advantage, rendering its action much more certain, more equal, and by readier absorption, probably, more effectual in producing an alterative influence upon the whole system." "I have seen," says Dr. Holland, "its influence in augmenting the secretions, procuring the absorption of morbid growths, altering the state of the skin in many cutaneous disorders, and changing the character of morbid actions generally throughout the system, in cases where I believe no other medicine, or combination of medicines, would have had equal effect. Its combination with bark, steel, sarsaparilla, &c., afford resources of the greatest value in the treatment of disease; and though otherwise held by common opinion, I think it on the whole as safe a medi-

* Dr. Holland.—Medical Notes and Reflections, page 242.

cine as calomel in the hands of the practitioner; in as much as its distribution can be made as equal and determinate, and its effects, from being given in a state of solution, are less likely to be interrupted by mechanical hindrances in the stomach and bowels."

It is also worthy of note that this medicine may be continued, in uninterrupted use, for a very considerable period, without obvious injury or inconvenience, and in certain cerebral or spinal disorders, a long unbroken course of this preparation is of singular avail. I am fully satisfied that much advantage might be derived from a more extensive employment of the bi-chloride of mercury, to obtain the full benefit of which, we must be both patient, and decided in its use: for in cases where it is of the greatest benefit the changes are often the slowest, and not testified by those instant and obvious results, which are sometimes required, even to fortify the mind of the physician in the perseverance proper to the practice, still more, to convince the sufferer and his friends of the necessity of time for the development of the full advantages of the means employed. Thus it frequently happens that the patient alarmed, it may be by the name of the medicine, and by the precautions taken as to its dose and effects, or tired by the little progress he appears to make, refuses after a time, to go on with the remedy, sometimes at the moment when becoming most effective, and when there was every reason for thinking a dangerous or distressing malady would eventually yield by a further employment of it. I have seen the advantages of a long course, in chronic iritis, and also in several cases of paraplegia, the slow progress of the disease giving full scope for its effects, and the great danger in prospect justifying a long trial of the remedy.

Nauseants.—Nauseants are employed in the treatment of opthalmic inflammation for the purpose of lowering the force of the circulation, and superseding the necessity of removing that immense quantity of blood which would otherwise be required, in order to prevent the loss of vision. They should seldom be given in the earlier stages of acute inflammation lest vomiting be excited, which until bleeding has been practised, will do much mischief by causing an increased injection of the already over-distended vessels of the eye. The best nauseant is the tartarized antimony, which should be given in very small doses, chiefly to keep down

the circulation, to effect which, might otherwise require a much greater loss of blood. On this principle Mr. SAUNDERS employed nauseants for the cure of acute purulent opthalmia in adults; Sir W. ADAMS, on the contrary, abandoning the scientific views of his preceptor employed emetics so as to maintain active vomiting for eight or ten hours, with the intention of "changing the action of the vessels engaged in the inflammatory process;" for this very notable discovery he claimed from government a pecuniary recompense.* It is needless to add any comment on this plan of treatment, no man, as yet, having been so insane as to follow it.

Tonics.—Tonics are required more especially in strumous diseases of the eye, and to Mr. Middlemore of Birmingham, the credit is due, of directing the attention of the profession to "*the utility of the sulphate of quinine in certain strumous inflammatory conditions of the eye*," and particularly in inflammation of the iris and membrane of the aqueous humor, when attended with constitutional symptoms, which he was the first to point out. In his lectures is recorded the case of a poor boy, which presents a very gratifying, and beautiful illustration of the power of this remedy in removing scrofulous inflammation,—those forms of it in certain parts of the organ of vision, which used to be most vigorously attacked by mercury. The name of the boy was R. Pears, decidedly scrofulous, having light hair, blue eyes, thin fair skin and tinted cheek, and being marked by great delicacy of organization. The child was dreadfully emaciated from repeated salivations, and when under the influence of mercury, the opthalmic complaint was in no respect improved. The eyes, says this gentleman, "when I first saw him, were as nearly lost as possible, for there was great inflammation of the cornea, of the membrane of the aqueous humor and of the iris, yet he eventually recovered his sight in a sufficient degree to follow his father's business, which was that of a brass-founder, although during the treatment of his case, I gave him no mercury whatever, but cured him by the use of sulphate of quina."

During the autumn of the past year (1842), the daughter of a publican residing in Retford was brought to me labouring under a severe attack of scrofulous inflammation of both eyes. The child was remarkably fair and very handsome, and had been suf-

* Med. & Phys. Journal, vol. xxix.

fering more or less from this disease for the last twelve months; she was not able to face the light, and could not open the eye-lids freely. The inflammation appeared to have commenced in the cornea, thence spreading to the membrane of the aqueous humor, and iris. I could not learn what had been given; the mother told me however, that she had procured some powders from a chymist, and from the appearance of the gums, there was every reason to suppose that they contained calomel. In this and many similar cases, the sulphate of quinine was eminently successful, not only in removing the disease of the eye, but also in improving the general state of the system; after it has been taken for about a month or six weeks, attention being also paid to diet and exercise, so great is the change wrought in the personal appearance of the patient in these cases, that it is almost impossible to recognise the puny, cross, feeble, delicate, little creature that was first brought to you, in the robust rosy-cheeked child, now standing in your consulting room.

Counter-irritation.—Many surgeons are very fond of producing irritation of the skin, by ointments or liniments. I have had little practical experience of their effects, but the little I have seen, induces me to think that they are very inferior to blisters. They must, in the first place, be used for many days before any useful influence is exerted on the skin, nor is this the only objection to their indiscriminate employment. Too much care cannot be exercised in daily watching their effects, when applied to the head and face, particularly in young persons, and I am much mistaken if the St. John Long practice, of applying plaisters of tartarized-antimony, &c. above the eye-brow, does not often produce, permanently mischievous results, in addition to giving rise to a state of inflammation and sloughing which has even in some cases threatened the loss of life.

During certain stages, of many inflammatory actions, existing in the eye, seatons and issues can be most advantageously employed; they are easily made, cause little or no pain, can be enlarged or diminished at pleasure, are perfectly manageable, and combine the advantage of a moderate degree of counter-irritation with a most salutary discharge.

The advantages connected with the use of blisters are many—such as the convenience of their application; the rapidity with

which they act, and the quick subsidence of their effects, when no longer needed. There may, however, be cases in which,—from extreme irritability of the skin,—from the liability of the patient to attacks of erysipelas,—or from their having produced on former occasions, a violent effect on the urinary organs,—it will be well to use some other mode of producing counter-irritation. With regard to the situation most desirable for applying them;—it is usual to place a blister at the back of the neck, or behind both ears, after bleeding has been practised, and in time to bring them nearer to the seat of the disease if required;—one may be put over each eye-brow, or upon the temples; or, if the subacute symptoms do not subside, a more permanent form of counter-irritation, for example, an issue in the arm, may be necessary. This is a very convenient place for the purpose; a small issue leaves little, or no mark, gives no trouble, and improves not only the affected eye, but also, the general health so much, that the patient frequently becomes as unwilling to allow it to be healed, as he was at first reluctant to permit its formation.

Local applications.—When there is much heat, pain, and inflammation of the external parts of the eye, I think no application so useful as warm water, or goulard water, applied warm after this, a weak solution of sulphate of zinc (two grains to an ounce) and towards the conclusion of the disease, the wine of opium or the nitrate of silver drops (one, or two grains to the ounce of water) may be employed. When there is much inflammation of the conjunctiva, attended with a considerable discharge, a solution of alum or some other mild astringent must be substituted for warm water; a long list of the various astringent substances employed might be given, and I might also dilate largely, upon their individual properties, and comparative merits, but I have no intention of doing so, my object being simply to direct the student to principles of treatment; and he will do well to view the subject comprehensively, as well as in detail,—to study it, as a destined general practitioner, rather than as a mere oculist.

Stimulants and Escharotics.—These remedies very often increase internal and deep-seated inflammatory affections of the eye, when injudiciously employed, however useful under proper management. The solution of the vinum opii, the sulphate of copper and the nitrate of silver, are most frequently employed;—as *escha-*

rotics, the best are, the nitrate of silver and the sulphate of copper in substance: the former advantageously used for the purpose of destroying the surface of an irritable ulcer of the cornea, the latter in removing a vascular or granular condition of the lids.

Having thus concluded the treatment of simple acute inflammation of the conjunctiva, and examined in a general manner the merits of the major part of those remedial agents which are most commonly employed for the subduction of inflammatory action in the different textures of the eye, I next propose to consider separately, a few of its more important diseases.

II. STRUMOUS INFLAMMATION OF THE CONJUNCTIVA.

In addition to the symptoms present in the affected organ we are much assisted in our diagnosis of this disease by a careful examination of other parts of the body. If the glands of the neck become enlarged in a child, without the infliction of a blow, or any local irritation; if they slowly continue to increase in size, the skin becoming red and shining, if, on an indistinct feeling of fluctuation, an opening is made in the most central part of the tumor, and the discharge be of a curdy character, such a succession of events would certainly denote scrofula. Or should the upper lip of a child become enlarged, under the same circumstances, its tegument puckered, and its mucous membrane thickened, and if it continue to increase without undergoing any other change than induration and thickening, such a condition of the lip indicates the existence of scrofula in the system.

Mr. Tyrrell does not consider that there is an inflammation of the conjunctiva, peculiar to scrofulous persons, but that the ordinary affections are all occasionally, more or less, modified by the peculiarity of constitution, which is denominated strumous, or scrofulous.

The parts of the eye most commonly affected in strumous individuals, are the *conjunctiva*, *cornea*, *iris*, and *retina*. With the exception of the retina, the affection, in all these parts, is marked by symptoms which clearly point out the nature of the disease, but in the latter appears to be a sympathetic affection unattended by any increased vascularity, or change in the nature of its orga-

nization; thus it often happens that the retina of an eye is so extremely susceptible during the morning of a bright sunny day that the patient will be found laying upon his stomach, his face buried in the pillow and avoiding the light as much as possible; but as soon as the sun declines and twilight commences, the eyes appear free from disease, and the little patient plays about the room with his companions. If such a child be taken from a darkened apartment to a well-lighted room, he will be quite unable to keep his eyes open, but if again conducted to the darkened room, he will open them in a moment without pain or inconvenience, proving, that although the susceptibility of the retina to the stimulus of light be much increased, there is no positive change in its state of vascularity, nor any alteration whatever in its structure.

SYMPTOMS.

In addition to this morbid sensibility of the retina, the patient complains of great heat; we are told that "the secretion from the eye is hot and scalding," as it passes over the face, and if the disease be of long standing, the surfaces of the eyelids, and face are frequently red and excoriated. I have at this time a little girl under my care, named Graves, in which the whole cheek on the affected side exhibits this appearance, the irritation being much increased from the friction and pressure of the patient's hands. Independent of this excoriation, if there be mischief going on in the transparent cornea, the lids are generally somewhat swollen and red; the examination of the eye under these circumstances becomes (more particularly to one inexperienced in such matters) a task of no ordinary difficulty. Of course it will be necessary on our first visit, thoroughly to examine the eye, for the purpose of ascertaining the nature of the disease; having done so, there can be no necessity daily to repeat this process, it can do no good, and not only gives pain to the little sufferer, but increases the mischief already going on in the eye.

On exposure of the globe to view, the ocular conjunctiva is found with its vessels injected with red blood, as in a case of simple opthalmia; the palpebral portion of the membrane has its vessels also more numerously distended with the red fluid. In those

instances in which the palpabræ are found tumid and red, ulceration of the cornea will also be discovered. Generally, one or two superficial ulcers exist, but occasionally they extend into the texture of the cornea. Scrofulous opthalmia is not only modified by peculiarities of system but rarely, if ever, exists without some important functional derangement under which the constitutional idiosyncrasy is elicited. The skin is the part which most frequently has its functions disturbed; it is dry and heated, its secretions are arrested, and in consequence the child becomes restless and feverish at night, seldom sleeping until daybreak, when the febrile attack in a great measure subsides. If the functions of the skin are properly rendered, those of the mucous surface of the alimentary canal are generally deficient, and the patient suffers from constipated bowels, has a foul tongue, and loss of appetite; there are also often proofs of hepatic or gastric derangement; the epigastrium or the right hypochondrium is tender on pressure, and the countenance sallow. In children, the morbid state of the abdominal viscera is manifested, by a tense and often tender condition of this part, and by the nature of the evacuations, which are either lumpy and slimy, or dark-coloured, greenish, and particularly fœtid.

Other cases however exhibit the opposite conditions as regards these functions, which instead of being diminished, become much augmented. Thus, some will suffer from very profuse perspirations, others from the most severe diarrhœa. The languid condition and pallid aspect of the patients so affected, would almost lead the surgeon to suspect some cause of great exhaustion.

Although the attack results, in the majority of cases, from the same causes as simple and pustular opthalmia, yet, when once induced, it becomes influenced, promoted, and sustained by some functional disorder, combined with the peculiarity of constitution. Like many other local scrofulous diseases, this form of opthalmia is most frequently found in children, under, or about, the age of puberty; it is now and then met with in the young adult, but rarely exists after the middle period of life.

This is one of the most frequent of any of the inflammatory diseases of the eye in children; out of fifty patients under my care with various affections of this organ, no less than thirty-six had scrofulous opthalmia; many of the cases occurred either in young

females, with suppressed or irregular uterine action, or in children near the period when the generative powers are becoming developed. In such patients the disease frequently subsides at once when this function is fully performed, even, after having resisted for months the ordinary modes of treatment.

TREATMENT OF SCROFULOUS OPTHALMIA.

As the local disease is promoted by peculiarity of constitution, and generally kept up by important functional disturbances, our first attention must be directed to the discovery of this error. The only local means I ever employ is counter-irritation by means of small blisters behind the ears, or at the back of the neck, never however, continuing the irritation by stimulating ointments, as I prefer the repetition of the blister, care being taken, that the first is healed before the application of a second. The eye may be bathed with warm water, or with tincture of opium and water, in the proportion of a table-spoonful to a quart of water, and in some cases a few leeches are required when the vessels of the conjunctiva are much distended with red blood; but we must indeed be careful how we extract blood in those cases; scrofulous children never bear its loss well, and are quickly prostrated by such treatment. I have seen cases again and again, in which mercury and leeches have been employed to reduce the inflammatory action; where the disease has advanced so as to destroy all vision except the perception of light, which have improved rapidly on this foolish treatment being abandoned, a better diet allowed, quinine given in large doses, and a weak solution of the nitrate of silver applied to the eye.

In the general treatment of these cases if the functions of the skin are diminished and the patient feeble, some very mild preparation of mercury is required, the dose being regulated by the age and strength of the patient.

℞ Hydr. c. Creta ..... gr. ij
Pulv. Rhei. ..... gr. iij
Pulv. Cinnam. Co. ..... gr. iij
Misce. ft. pulv. omni nocte.

℞ Quinæ Disulphatis ..... gr. i
Acidi. Sulph. Dil. ..... ♏ij
Syr. Limonis ..... ʒij
Tr. Aurantii ..... ʒij
Aquæ Rosæ ..... ʒi
M. ft. haustus ter in die sumendus.

Supposing however the constitutional derangement to exist in the alimentary canal, the remedies employed must be directed to the part which appears most in error. If the complaint be gastric the diet should consist of light farinaceous food; very small doses of some mercurial being administered, combined with henbane, and followed by an aperient. If the function of the skin be impaired, as in the former case, a warm bath may be used, to excite cutaneous action, care being taken that exhaustion is not induced; with proper management this will prove a much more effectual diaphoretic than the usual internal medicines administered, which are always tardy and often fail.

When the disease is accompanied by profuse perspiration or diarrhœa, blisters must be employed with very great caution; the slightest counter-irritation frequently sets up an inflammatory action which ends in gangrene and mortification. If used at all it must be confined to the application of a mustard plaister, and even this must not remain too long. The perspirations are best checked by dilute sulphuric acid with sulphate of quinine, attention being at the same time paid to the state of the bowels, and a nourishing, but not too stimulating diet allowed. Should the diarrhœa prove very obstinate, some aromatic absorbent must be administered, and the diet confined wholly to light farinaceous substances.

In other cases where the catamenia is either altogether suspended, or impaired, small doses of aloes and steel will be useful.

℞ Pil. Aloes c. Myrrha .. gr. iij—gr. vi
Ferri Sulphatis ..... gr. i
Ol. Carui..... m i
M. ft. pil. ij o. n.

The diet should be nutritious, and exercise in the open air and particularly on horse-back will be highly serviceable. It is nevertheless advisable to avoid exposure to cold air, especially if combined with moisture; but in dry and mild weather moderate exercise in the open air much accelerates the cure, although when walking, or riding the eyes will require the protection of a shade. The body should be clothed in flannel, so as to combine the advantages of a light but warm garment; woollen to the feet is quite as necessary as flannel to the trunk. When the disease is removed, every means should be taken to prevent a relapse, by improving the general health; sea-bathing will tend much to strengthen the patient.

I have only further to remark with regard to exercise, that scrofulous children cannot bear a great degree of fatigue without suffering afterwards; exercise on horse-back is most beneficial, but nothing can be more absurd than the practice so frequently insisted upon by parents, which obliges one child to walk so many hours, and another to ride so many miles, insisting on a certain diurnal amount of exercise without distinct reference to its individual effects. I have adopted one rule for the regulation of exercise—*never permit a child to walk, or ride sufficiently long to produce fatigue, never allow food to be taken immediately after exercise, and if possible, enjoy half an hour's sleep before dinner;* although it is impossible to fix the amount of exercise that ought to be taken, and which of course must be regulated by the physician in attendance, still in every case where the fatigue is considerable after taking a certain quantity of exercise, either the amount be must be abridged, or the mode of taking it altered; if walking produces fatigue, exercise on horse-back must be substituted, and if this cannot be borne, an airing in an open carriage must only be allowed.

DIET.

The characters of the diet best suited to strumous patients and delicate children are very few and simple; it should be light that it may be quickly digested, and nutritious that the system may be properly supported. It is madness to permit a child to take a mass of food which when digested yields scarcely any useful product, and which, when undigested as it generally is, must necessarily produce derangement of the system. Animal food, plainly dressed ought to be given once during the day, and in the evening a little jelly, beef tea, or good veal broth, with rice, may be taken; the breakfast should consist of boiled milk with or without the addition of arrow-root. Although vegetables are to be given with caution, a good boiled potato at dinner, need not be refused. We may therefore from day to day select from the following articles of diet—mutton and beef, plainly boiled or roasted; poultry, game, animal jellies, milk, sago, rice, arrow-root, and bread, (which must be kept some days before it is used, and toasted),

food calculated to maintain the powers of the stomach, and this organ not reduced and enfeebled by over-exertion, will be supplied with those substances only which can be converted into nutriment without producing indigestion; need I add that every case will present peculiar features, and that it is foolish to attempt to lay down rules of diet and rules of practice as though they were to be made use of on every occasion.

Enquiry must always be directed with regard to the residence of the patient; if found to be particularly unhealthy, either from the dampness of the situation, its proximity to some river, stagnant pool, or deleterious manufactory; from the bed rooms being badly ventilated, or excessively crowded, from being placed near a wood or surrounded by trees,—such changes must of course be made in these particulars, as observation and experience point out. If the circumstances of the child's friends permit, a removal to a more pure atmosphere will be highly beneficial; or supposing this cannot be obtained, those improvements must be adopted in their present habitation which on general principles appear most conducive to health.

III. MORBID CONDITIONS OF THE CONJUNCTIVA AND SCLEROTIC.

A rather extensive practice of my own in diseases of the eye, as well as a careful examination of numerous patients brought to the wards of the opthalmic hospitals of the metropolis, and Hôtel Dieu, Paris, induces me to consider this form of disease very frequent, and I have been consulted in many cases, where it has assumed a chronic form, and in which the patients have long been exposed to great pain and suffering. Mr. TYRRELL, in his valuable and truly practical work, traces this disease, in almost every case, to a rheumatic diathesis; and although in some of my patients rheumatism has affected other parts of the body, either at the same time or previously, in others the affection of the eye has been independent of it, so far as I have been enabled to discover. It may be well to consider: 1.—The appearance of the eye, with the local and constitutional symptoms; 2.—the causes; and 3.—the treatment of this form of inflammatory disease, which appears simultaneously to attack both the sclerotic and conjunctiva.

1. *Appearance of the eye.*—If examined with a powerful glass, the eye will be found to exhibit the compound symptoms, which clearly point out an affection of the two membranes at the same time. There is a sensation as though fine grains of sand were placed between the eye-lids ;—a feeling of heaviness and stiffness about the lids; and the eye-lashes are generally gummed together during sleep. This secretion is of a very peculiar viscid nature, and coagulates on the cilia and at the canthi. The vision may become affected; luminous objects seem to possess a coloured ring ; the patient shrinks from the light, complains of heat and increased lacrymation ; the tears are hot, and impart a burning sensation, and not unfrequently flow over the lower eye-lid upon the cheek.

Such is an outline of a case under ordinary circumstances, and such the symptoms a very slight examination will detect; but, in addition to these, we shall find the conjunctiva of a deep-pink colour, and, on very close inspection, the vessels of the sclerotic may also be seen passing beneath those of the conjunctiva; they are of a dull-red, and pass in straight lines radiating from the outer edge towards the orbit. The vessels of the conjunctiva are more tortuous, and frequently anastomose ; they are also of a different colour. The patient experiences a dull aching pain, which is not confined to the globe, but extends over the forehead, temple, cheek, and even affects the side of the head. The globe is tender and painful, as though it had been bruised, and the patient frequently exclaims, " My eye feels as if it had received a violent blow upon it." This leads us, in the next place, to an inquiry into the constitutional symptoms; and I may at once remark, that I never remember to have seen one case in which there was not, in addition to the local affection, considerable general derangement of the system. The functions of the uterus are imperfectly performed ; there is either total suppression of the menses, or the secretion is scanty and of a pale straw-colour ; the tongue is loaded, particularly at the back; the hands are cold and clammy ; there is little or no appetite ; the bowels are loaded—the abdomen appearing tense and swollen ; the secretion of urine is scanty, and a deposit of red sediment may frequently be detected; there is a general febrile excitement; and towards night many of these symptoms are aggravated.

2. *Causes.*—The disease is seldom seen in persons under puberty, and for the most part attacks such as are devoid of constitutional vigour; and of course every thing tending to depress the powers of the body has a tendency, if not to induce, at any rate to render the eye more liable to attacks of this nature. The disease being most common in the spring and autumn, among the more common exciting causes may be mentioned the influences of sudden changes of temperature, cold winds, and damp air. Mr. Tyrrell was enabled, in some of the more obstinate forms of this disease, to trace the source to a gonorrhœal taint in the constitution. To this list of direct or exciting causes must be added errors in diet, which tend to produce more or less gastric disturbance.

3. *Treatment of inflammation of the conjunctiva and sclerotic.*—The plan to be adopted will depend, in some measure, upon the extent of the disease, and the stage at which we are called to attend it. In consultation-practice we seldom see cases of this kind when in the bud; some progress is generally made before an opportunity is afforded of seeing them; and I am free to confess, that in too many cases the use of the lancet, large quantities of leeches, and other paraphernalia for reducing the system, have to be lamented: they are never required in this form of the disease; and so far from doing good, frequently produce considerable injury.

Suppose, then, when called, we find the disease confined to the conjunctiva and sclerotic--the more important parts as yet being free from the disease—our attention will, in the first place, be directed to the deranged functions. A sallow complexion, coated tongue, offensive breath, confined bowels, and bad appetite, point out the propriety of administering a full dose of calomel and rhubarb, followed every three or four hours by a senna draught, until the bowels are unloaded, and the fulness of the abdomen removed. Having procured this free evacuation of the bowels, it will be necessary to endeavour further to improve the condition of the secretions, by small doses of mercury, at bed-time; and as there is frequently great pain and restlessness, an opiate may be given with advantage. I find this the most useful:

℞ Pulv. Doveri ..... gr. viij
Hydr. c. Creta ..... gr. iv ft. pulv.

In the morning this may be carried off by a simple saline

draught. The feet should be placed in warm water, and the body warmly clothed; the patient must also be kept from exposure to cold air, and allowed, in the first instance, a light farinaceous diet—milk, whey, soda-water, gruel, and arrow-root. I consider it also important (and more particularly does this caution apply to country practice), that no bread should be given that is not at least a week old; and I prefer it toasted: vegetables are decidedly injurious.

The local treatment is also highly important. A few leeches may sometimes be applied under the eye-lid with advantage, and the bleeding promoted by fomentations of warm water, or opium and water; a drachm of tr. opii to a pint of warm water. A large blister should be applied to the nape of the neck and kept open. This will be found a much better plan of treatment than bleeding, either local or general, and it affords more decided and continued relief.

If the secretion from the eye is neither thick nor viscid, "I prefer," says Mr. Tyrrell, "the application of dry warmth, either by portions of new flannel heated on a warming-pan, or by small flannel bags partly filled with camomile flowers, and heated in the same manner. Such applications may be used as often as the patient desires."

In the majority of cases, however, the secretion is thick and viscid; and then, in the first instance, warm water and opium is the best application; but according to my experience, the most useful lotion is a solution of nitrate of silver, in the proportion of two grains of the argent. nit. to one ounce of distilled water; this should be dropped into the eye twice a day. When there is much pain and tenderness, a few grains of extract of belladonna may be added to the last-named application with advantage.

Under this plan of treatment the patient becomes more comfortable, the tongue clean, and the secretions improved; the eye, though still weak and painful, is better, and has lost its bright pink colour: true the vessels are still injected, but the hue is duller, and there is no longer a discharge of thick gluey matter. A more generous diet is now required; meat once a day, porter, or wine and water, should be given: care being taken that the bowels are kept open. Five grains of blue pill at bed-time, and an aperient draught in the morning, must once or twice a week

be exhibited. Tonics are also requisite, such as, quinine with an extra quantity of sulphuric acid, in the infusion of roses: this is more particularly useful when the patient is bathed in perspiration during the night, and when there is considerable debility. Or five grains of powdered bark, and three of sesquicarbonate of soda, may be given two or three times a day. Compound decoction of sarsaparilla, with liquor potassæ, or infusion of gentian and lime water, will be found very useful. In cases where the uterus imperfectly performs its functions, preparations of steel, with the compound decoction of aloes, are indicated; and it is curious to observe, in patients suffering from diseases of this nature, how soon the local affection subsides on the improvement in the general functions of the body. Turpentine and colchicum have also been extolled as certain remedies in affections of this kind. Never having used them, except the latter in some forms of this disease, I can, of course, pronounce no opinion as to the merits of either, but think them inferior to the remedies already recommended. The following cases may be mentioned as illustrative of the success of the treatment above pointed out.

CASE I.

During the spring of the present year (1841), I was requested to see the daughter of the coachman of Granville Harcourt Vernon, Esq., M.P. for East Retford. I found her suffering under a rather severe attack of inflammation, affecting both conjunctiva and sclerotic. The palpebræ, at their free margins, were much swollen, and the vessels of the conjunctiva injected with blood; the vision was much impaired; the iris dull and turbid, and perhaps a little altered in colour; the pupil was contracted; the pain in the eyeball considerable; there was also, on the ocular part of the membrane, a slight chemosis. She complained of pain in the right shoulder, and fancied she had taken cold some time ago. This was the third or fourth attack of the disease during the last two years, and the affected eye had now been bad two months, and had not improved under the remedies employed. The tongue was loaded; the abdomen tense; the bowels costive, seldom relieved except by medicine, and frequently two or three days passed without

any evacuation being obtained. A sharp cornea-knife was applied to the inner side of the lower lid, and the bleeding encouraged by fomentations of warm water. Some extract of belladonna was directed to be applied over the eye every night. Two grains of calomel, and four of extract of colocynth, to be taken directly, and an aperient draught in three hours.

℞ Hydrarg. c. Creta..... gr. iij
Pulv. Doveri..... gr. iij
Pulv. Sodæ Sesquicarb. .gr. viij
ft. pulv. o. n. sumendus.

℞ Decocti Aloes Co. ..... ʒiij
Infusi Sennæ ..... ʒiv
Tr. Card. Co. ..... ʒij
ft. haust. mane meridieque sumend.

Four leeches were applied under the eye, and repeated again in three days; and a blister to the back of the neck.

Under this plan of treatment a great improvement took place in the general health. A nutritious diet was then prescribed, with a glass of port wine in water once a day, and the following mixture substituted for the above. (This form of making the infusion of chirayta was first pointed out to me by Sir James Clark, and is one of our best vegetable tonics.)

℞ Chiraytæ ..... ʒi
Aquæ Frig. ..... ʒiij
Infuse per horas quatuor, tum cola.

℞ Hujus Solutionis ..... ʒiv
Potass. Iodidi ..... gr. iss
Aquæ Rosæ ..... ʒv
Syr. Tolutani..... ʒi
ft. haustus ter in die sumendus.

Three grains of Hydrarg. c. Creta and two of extract of Hyoscyamus, at bed-time.

In cases of this kind the above preparation of iodine, combined with a mild bitter, is one of the best medicines we can possibly prescribe. A solution of nitrate of silver (three grains to an ounce of water) was applied twice a day to the eye; and in about six weeks from the time of my first seeing her, no traces of disease remained. In all cases of this kind we have to fear an extension of the disease to the iris, choroid, and deeper textures of the eye.

CASE II.

Mary M—, æt. 25, thin and pallid, applied to me with inflamma-

tion of the conjunctiva and sclerotic. She had been attacked with rheumatic fever some years ago; had not menstruated for the last six months. The hands and feet were cold, and the skin moist. She obtained the means of supporting herself by dress-making, and was frequently confined for days in her small room without taking exercise. On the Sunday she was glad to remain in bed, feeling no inclination to move about. The local affection was severe. I directed the application of warmth to the eye, and a weak solution of alum. The pil. al. c. myrrh, at bed time, and some decoction of aloes and infusion of gentian during the day; a blue pill and senna draught once a week. She was placed, through the charity of a clergyman, upon a good light nutritious diet, made to keep herself warmly clothed, to put her feet in warm water, and to take moderate exercise when the weather permitted.

In about a month the catamenia appeared, and the disease in the eye gradually vanished without the application of any local remedy.

CASE III.

Mr. C———, æt. 26, a very gay and dissipated young man, applied to me, suffering under the worst possible form of this disease. He had a discharge from the urethra at the time, and "could not tell how many times he had been affected with gonorrhœa." Had taken some pills and copaiba for this attack, but had paid no attention to diet; had in fact been frequently up late at night, indulged in sexual intercourse, and partaken freely of wine and spirits. He complained of pain in one knee. He was requested to keep at home, to abstain from spirits and wine, and live upon a nutritious diet. His appearance was haggard; the countenance pallid, and care-worn in the extreme; there was very great depression; the pulse quick and feeble; there was also considerable conjunctivitis, and a viscid secretion from the eye. The only local application was warm water and tincture of opium, and half a drachm of blue ointment, with opium, was rubbed over the eye every night at bed-time.

℞ Pulv. Doveri ..... gr. x
Hydrarg. c. Creta ..... gr. v
ft. pulv. hora decubitus omni nocte.

℞ Decocti Aloes Co. ..... ℥ss
Infusi Gent. Co. ..... ℥i
M. ft. haust. mane.

℞ Potass. Iodidi ..... gr. ij
*Tr. Sem. Colchici ..... ♏x
Infusi Chiraytæ ..... ℥iv
Aquæ ..... ℥i
ft. haust. ter die.

May 6th.—Under this treatment he appears better this morning; is cheerful, and has passed a good night; the eye still continues very painful.

A blister to the back of the neck;—continue the remedies.

8th.—Going on well.

A drop of the solution of nitrate of silver to be put into each eye every morning.

14th—Better. There is yet some inflammatory action going on in the sclerotic. He expresses himself as feeling much better in health. I now ordered him to take a pint of porter every day, and to leave off his present medicines, and not to use any more mercurial ointment; to continue the nitrate of silver in solution, three grains to an ounce of water, once a day.

℞ Pulv. Doveri ..... gr. iv
Hydrarg. c. Creta..... gr. iij
ft. pulv. o. n.

℞ Cinchonæ ..... gr. iv
Sodæ Sesquicarb. ..... gr. iv
M. ft. pulv. ter die.

June 25th.—Quite well.

I have now mentioned the forms assumed by this disease, and the treatment found most successful. In some few cases change of air was recommended, and considerable benefit experienced in consequence.

IV. ON THE IRRITABLE OPTHALMIA OF FEMALES, WHEN SUCKLING.

There is a form of opthalmia with which women, are sometimes attacked during the period of suckling. I do not say they are the only persons liable to this disease, but as it occurs more frequently in them than in any other class of patients, and as the irritable opthalmia from suckling exhibits the best illustration of the disease I shall entirely confine my remarks to it.

* This preparation used to be called the wine of the seeds; in the last edition of the Pharmacopœia our College ordered it to be made with spirit.

The disease attacks women when suckling, particularly if they have continued to nurse their children too long, and more especially occurs after this plan has been adopted two or three times. It is a very common opinion, that suckling prevents impregnation; women, among the lower classes, supposing that conception cannot again take place until the child is weaned; they therefore continue to nurse their infants for a considerable period, and this frequently induces an attack of amaurosis, or this peculiar form of opthalmia.

SYMPTOMS.

You are frequently asked to remove some foreign body from the eye, the patient constantly experiencing a sensation similar to that produced by a fly, or some fine gritty substance beneath the lids, and expresses anxiety that the foreign body should be removed; there is also considerable smarting, and a continued itching of the eye-lids, with a feeling of stiffness, and difficulty of separating them, after they have been sometime closed. All these symptoms are much aggravated towards evening, and more particularly if the patient has been engaged during the day, in needlework or any other occupation which requires the eye to be constantly fixed on a small object.

On examination, the margins of the eye-lids present a red and somewhat angry aspect; there is a constant viscid discharge which collects at the inner canthus; there is also more or less intolerance of light: but this symptom is not so marked as in some other forms of opthalmia. In addition to this, there will be a continued quivering of the lids, arising from a spasmodic action of the orbicular muscle, and in some cases slight dimness of vision.

A person unacquainted with this peculiar disease and ignorant of the fact, that it is often attended with amaurosis, would be very apt to pronounce a hasty opinion, supposing the slight obscurity of vision to proceed from the apparently trifling inflammatory action set up in the eye-lids and conjunctiva; but when there is partial loss of sight in these cases, both our treatment and prognosis must be cautious in the extreme; for it not unfrequently happens that the disease, which at first sight appears of no conse-

quence, and leads an inexperienced practitioner to suppose that the partial amaurosis will vanish on the subsidence of the external inflammation, has gone too far for removal.

In speaking of strumous opthalmia I ventured to remark, on the authority of Mr. Tyrrell, that the inflammation was not a *peculiar* one, but that owing to some idiosynerasy of constitution, an attack of inflammation of the eye assumed a peculiar form in scrofulous children; the same remark applies to irritable opthalmia; for it appears that derangement of health in some individuals under certain conditions of body is apt to engender diseases of the eye. Mr. Middlemore traces irritable opthalmia to this cause, and imagines that "that the continuance of suckling for a long period, especially in women who have suckled many children previously, produces a general derangement of health to which the origin of the disease may be fairly attributed."

TREATMENT OF IRRITABLE OPTHALMIA.

In no disease of the eye is the aphorism laid down at the commencement of these observations, *that in all inflammatory diseases of the eye the first indication is the removal of the exciting cause*, more strongly to be enforced, than in irritable opthalmia. If, on visiting a patient we find she has had several children in quick succession, and that each has been suckled for a much longer period than usual; if irritable opthalmia accompanied with quivering of the lids, and some indistinctness of vision be present, at once let an extinguisher be put upon the cause of the disease; from that moment insist upon the weaning of the child. The imperative necessity of this measure admits of no delay, and for my own part, if the patient, after a candid explanation of the dangers incurred by a continuance of the practice, still persisted in suckling her child, I would at once retire; for I will never incur the responsibility of any case, the management of which is not entirely left to myself, without any interference on the part of the patient or her friends.

Having removed the cause, the treatment of these cases becomes very simple; if the disease has only been present a few days, a small quantity of the *Unguentum Plumbi* applied to the tarsal

margins night and morning with the frequent use of the zinc wash, and a blister to the back of the neck, will remove the irritation. The state of the secretions must be attended to, and if the pain and irritation are considerable, a dose of calomel and Dover's powder at bed time, and an aperient the next morning, must be taken. The tingling smarting sensation, and spasm of the lids are best relieved by a drop of the vinum opii introduced between the eye-lids two or three times a day. In cases where the disease has made some progress the employment of stimulants must be a little delayed; a few leeches meantime being applied, the eye fomented with opium and water, or the decoction of poppies, and the bowels freely acted upon.

When amaurosis exists in combination with irritable opthalmia, it must be looked upon and treated as quite distinct from the inflammatory affection, there being no connexion between them, except the exciting cause, which has been the same in both cases.

In the "Clinique Chirurgicale de l' Hôpital de la Pitié," par J. Lisfranc, this celebrated surgeon remarks, that in "*Nervous Opthalmia* the antiphlogistic treatment fails; I have often found the smearing a small portion of good extract of belladonna moistened with water, upon the temples and around the base of the orbit night and morning has effected the cure of these cases in a very few days when they had most obstinately resisted other means."

The disease however frequently requires no treatment. I know at this time a lady always attacked with this irritable, or nervous condition of the eye, when suckling her children, and which, when I last saw her, had continued for a considerable period, but on my advising her to wean her baby, the eye was quickly restored to a healthy condition.

ON PURULENT OPTHALMIA.

Our attention must next be directed to one of the most fearful diseases to which the human eye is liable; fearful from its results, and also from the very great rapidity with which it runs its course, for if not speedily checked, in the more severe forms of purulent opthalmia, a very few hours suffice to deprive the unfortunate patient of sight, and that for ever.

The importance of this disease demands a most careful consideration and requires us to examine—

I. The history of purulent opthalmia.
II. Causes.
III. Prevention.
IV. Symptoms.
V. Effects.
VI. General and local treatment.

It will also be necessary to make a further division of our subject:—1st, into purulent opthalmia attacking the adult, and 2nd, into that form of the disease which is observed, more particularly in the infant.

I. HISTORY OF PURULENT OPTHALMIA IN THE ADULT.

Purulent and gonorrhœal opthalmia are spoken of by some authors as distinct diseases, and a list of symptoms given by which each may be distinguished—I shall make no such distinction, being fully convinced that any inflammation of the conjunctiva attended with a purulent discharge, although described as presenting various aspects, is nevertheless the same, although its degrees of severity will of course vary, according to the age and constitution of the individual attacked as well as climate, and mode of origin, more particularly the latter, for in every case of purulent opthalmia that has come under my immediate observation, it has been much more severe in its nature, more rapid in its progress, and more generally fatal in its consequences, frequently destroying or very much impairing the eye, when the result of a specific poison. I speak, of course, more particularly of cases in which the disease has been allowed to make some progress, for even in purulent opthalmia, the result of gonorrhœa (its most frequent cause in this country,) useful vision may, in the great majority of cases, be preserved by proper treatment.

About thirty five years ago this disease prevailed to a fearful extent in the British army. In the 52nd. Battalion, which consisted of seven hundred men, six hundred and thirty six cases of opthalmia were received into the hospital in one year, and of these, no less than fifty were dismissed with the loss of both eyes—and

forty with that of one.* It appears also by the reports from the Hospitals of Chelsea and Kilmainham, that the country had to support, in 1810, two thousand three hundred and seventeen soldiers, blind from the effects of opthalmia. It must also be remembered that in the above account those soldiers are not included who had only lost one eye, as they were sent to their respective regiments for the purpose of performing garrison duty.

"The contagious opthalmia has crippled many of our best regular regiments to such a degree as, for a time to render them unfit for service, and though the regiments that have been in Egypt have suffered most, yet it has prevailed in others which have never been in that country.† "

Of 1604 cases of acute purulent opthalmia treated by Mueller in the Prussian garrison of Mentz only 1344 were restored to service perfectly well, as respects the state of their vision.‡ M. Guillie,§ has given us a very interesting account of this disease which broke out in the French slave ship Rôdeur, Captain B—— of 200 tons burden, which left Hâvre on the 24th of January, 1819, for the coast of Africa, and which reached her destination (off Bonny) on the 14th of March. No trace of opthalmia had been observed among the inhabitants during their stay at Bonny, till April 6th, and it was not until the Rôdeur had put to sea, and was nearly at the equator that the first symptoms of this frightful disease were perceived.

"It was observed that the Negroes who were 160 in number and crowded together in the hold, had contracted a considerable redness of the eyes which spread rapidly from one to another. At first the crew paid no very great attention to this appearance imagining it was occasioned only by want of fresh air in the hold, and by the scarcity of water, for they already limited the allowance to eight ounces a day, and some time after they could only allow half a glass daily. It was thought sufficient to use an eye-water made from an infusion of elder flowers; and following the advice of the person who acted as ship surgeon, to bring up the Negroes in turn upon deck. This salutary measure they were however obliged to abandon, for the poor Africans, torn from their native

* Vetch, page 69.
† Sir J. Macgregor's Transactions, p. 51.
‡ Middlemore on the Eye, Vol. 1, p. 105.
§ Bibliothique Opthalmologique, p. 74.

home, and heart-broken by the horrors of their situation, as well as the recollections of their lost freedom, embracing each other threw themselves into the sea."

It appears from the account before me, that the disease advanced among the Negroes with fearful rapidity and even extended to the crew—the first man attacked, belonging to the ship, was a sailor who slept under deck close to the grated partition which communicated with the hold. Next day a boy was affected with opthalmia, and in three days more, the captain and almost all the crew were seized. The disease is thus graphically described by M. Guillie.

"In the morning on awakening the patient experienced a slight prickling and itching in the edges of the eye-lids which became red and swollen. Next day the swelling of the eye-lids was increased and attended with sharp pain, in order to lessen which, they applied to the eyes poultices of rice as hot as they could bear them. On the third day of the disease, a discharge of yellowish matter took place rather thin at first but which afterwards became viscid and greenish, and was so abundant, that the patients had only to open their eyes every quarter of an hour, when the water fell in drops. From the commencement of the disease there were considerable intolerance of light and discharge of tears. When the rice failed, boiled vermicelli was used for poultices. On the fifth day blisters were applied to the nape of the neck of some of the patients; but as the cantharides were soon exhausted, they endeavoured to supply their place by the use of pediluvia containing mustard, and by exposing the swollen eye-lids to the steam of hot water."

"Far from diminishing under this treatment, the pain increased from day to day, as well as the number of those who lost their sight; so that the crew, besides fearing a revolt among the negroes, were struck with terror lest they should not be able to manage the vessel till they should reach the Caribbee Islands. One sailor only had escaped the contagion, and upon him their whole hopes depended. The Rôdeur had already fallen in with a Spanish ship, the Leon, whose whole crew were so affected with the same disease, that they could no longer manage their ship, but begged the aid of the Rŏdeur, already almost as helpless as themselves. The seamen of the Rŏdeur, however, could not abandon their own

ship, on account of the negroes; nor had they room to receive the crew of the Leon. The difficulty of nursing so many patients in so narrow a space, and the want of fresh provisions and of medicines, made the survivors envious of those who died; a fate which seemed fast coming upon all, and the thought of which caused general consternation.

"Some of the sailors made use of brandy, which they dropped between their eye-lids, and from which they experienced some relief; which might have suggested to the surgeon the propriety of a local stimulating treatment.

"On the twelfth day, the sailors who had experienced some relief came upon deck to relieve the others. Some were thrice attacked with the disease.

"The tumefaction of the eye-lids having subsided, some phlyctennlæ were observed on the conjunctiva of the eye-ball. These the surgeon had the imprudence to open: a step which proved hurtful in his own case, for he remained blind without any possibility of recovering his sight.

"On reaching Guadaloupe, on the 21st of June, the crew was in a deplorable state; but, very soon after, from the use of fresh provisions, and by simple lotions of spring water and lemon juice, recommended by a negress, they became sensibly better. Three days after coming ashore, the only man who, during the voyage, had escaped the contagion, was in his turn seized with the same symptoms; the opthalmia running its course as it had done on board ship.

"Of the negroes, thirty-nine remained totally blind, twelve lost each one eye, and fourteen had specks, more or less considerable, of the cornea.

"Of the crew, twelve men lost their sight: one of these was the surgeon. Five lost each one eye, and amongst these was the captain. Four had considerable specks, and adhesions of the iris to the cornea."

II. CAUSES OF PURULENT OPTHALMIA.

Purulent opthalmia in the adult, for the most part in this country, arises from the contact of purulent secretion. It may however

result from exposure to cold and damp, or local violence; it occasionally accompanies small-pox, measles, and scarlatina; one of the most severe cases I ever saw, occurred in a patient of Mr. G. Babington's, at St. George's Hospital, after an attack of erysipelas of the head. The fearful disease which spread such devastation among our troops in Egypt, appears to have been produced by constant exposure to vicissitudes of climate, combined with some peculiar atmospheric influence acting on men exposed to every possible hardship, whose constitutions were completely broken, by bad food, scarcity of water, irregular living and constant fatigue. This opinion is supported by a no less authority than Clot Bey, who traced it to similar causes.

IS THE DISEASE CONTAGIOUS?

Of this there can be no doubt; in the great majority of cases it is the result of purulent matter either from the *urethra* or the *vagina*, applied directly to the eye; and not as some have supposed by metastasis. I am satisfied that authors are in error, who believe that the discharge from the urethra ceases, or is much decreased in quantity when the eye becomes affected. The first person I ever saw with purulent opthalmia was a patient at the Lock Hospital; the gonorrhœa was as severe as possible, when the eye was attacked, and it continued nearly a fortnight afterwards. This opinion appears to have arisen from the fact, that the disease in the urethra usually lessens, and sometimes altogether subsides from the treatment necessary to subdue the inflammation of the conjunctiva. It is also an error to suppose that gonorrhœal opthalmia only attacks the male. Mr. Tyrrell (page 63) relates a case in which purulent opthalmia, of so severe a character as to destroy both eyes, resulted from a lady unfortunately using a towel belonging to her son for the purpose of washing her face; the young man had at the time acute gonorrhœa and had used it to cleanse his urethra. This suggests the necessity of extending our examination beyond the person suffering from purulent opthalmia, before we decide upon the cause of the disease. It is quite useless to ask the individuals attacked, if they are labouring under gonorrhœa, as a matter of course this will be denied, and it is fre-

quently a task of considerable difficulty to arrive at the truth. A boy (æt. 18) whose case I shall afterwards more particularly relate, applied to me with a very severe attack of purulent opthalmia in both eyes. I satisfied myself that he had no discharge from the urethra, and was puzzled to account for it, being convinced that his disease had a specific origin. At length I learnt this boy slept with a young man; he was examined and found labouring under acute gonorrhœa.

I have made no division of this disease in the adult, although *opthalmia purulenta*, *gonorrhœal opthalmia*, *opthalmia neonatorum*, *and Egyptian opthalmia*, are terms employed to denote particular forms of the disease, being fully satisfied that they are of no practical importance. The leading modifications result from the age and constitutional vigor of the party affected; and from the existence of fever, erysipelas, small pox, or some other severe constitutional disturbance at the same time. The specific form, or that arising from the application of morbid secretion to the conjunctiva is the most severe, and far more destructive than any of the others. Further, when the attack accompanies any of the acute febrile diseases, as measles, scarlatina or small-pox, it is generally formidable and destructive.

CASE IV.

Mr. T——— æt. 75, was under my care for cataract in both eyes. The operation was performed in the usual manner, and every thing went on very favourably for ten or twelve days, by which time he could see remarkably well. On making my visit one morning I found him attacked with severe purulent inflammation of the right eye, which in defiance of the most active treatment * very rapidly went on to the destruction of the organ. Fortunately the other eye was preserved, although it did not altogether escape. The disease arose from the application of matter, the patient was suffering from that peculiar affection of the prepuce so common in old men, he said "the parts had been uncomfortable and he had scratched them, and afterwards rubbed the eye."

* Active, considering the age of my patient, the treatment of the disease in old people will be considered when we proceed to examine it more minutely.

Purulent opthalmia has been known to affect a nurse after syringing the eyes of a patient attacked with the disease, a similar accident has happened to a dresser in the hospital. I once had rather a severe attack of it myself from this cause. A patient consulted me for a discharge from the urethra; I advised the use of an injection and on throwing some warm water up the penis with a syringe a portion went into my right eye; considerable pain was felt immediately, followed by inflammation, and the next day by a slight purulent discharge. I was much out of health at the time. Again the secretion has been applied to the eye of a healthy individual without being followed by any inflammation; he has perhaps complained of smarting at the moment of contact, which has soon subsided, and not been succeeded by any unpleasant symptoms.

We may conclude therefore, that in the majority of cases, purulent opthalmia is the result of contagion, although the application of a specific poison will not in all cases produce this form of purulent inflammation. In addition to the exciting cause there must be also a constitutional *susceptibility—want of cleanliness—disordered health—exposure to a burning sun, or night air—to dust, or a dense moist atmosphere.*

In the fourth volume of the *Edin. Med. and Surg. Journal*, is a valuable paper from the pen of Mr. PEACH, from which it will be found that those men suffered most severely from purulent opthalmia, whose health had been disordered by continued intemperance, and who had been long exposed to the influence of a brilliant sun; he remarks, "in June and July 1805, many predisposing and exciting causes existed at Hythe. I need not inform you what *regularity* and *subordination* exist in a corps, whilst volunteering for general service goes on, and every soldier has ten guineas to get rid of. Recruits and young soldiers at frequent drills were exposed, for a great part of the day, to the heat of the sun. From the situation of Hythe barracks, the men found the dust very troublesome, in the windy weather which we then had. I believe I need not adduce more occasional causes of this disease."

Mr. MIDDLEMORE says that a damp, dense condition of the atmosphere will not only act as a cause, but will also materially favour the extension, and aggravate the symptoms of purulent opthalmia, even admitting that it is excited by some other agent.

and this opinion is also expressed by Tyrrell, Lawrence, Larrey, Assalini, Guillie, Forbes, Vetch, Smith and others.

I have spoken of the highly contagious nature of this disease, because I am fully satisfied that its most frequent cause is an application of matter, either from an inflamed eye, or the urethra; but do not intend to confine the term to the mere contact of matter; abundant evidence is before us to warrant the assertion that when once produced it may be communicated by atmospheric influence, the air becoming tainted, or as it were, loaded with the minute particles of matter, which are capable of giving rise to it: that the disease may be thus propagated among persons associated closely together, is clearly proved by the history of the negroes in the confined hold of the slave ship (Rouleur), the spreading of this terrific affection in the army and navy, in some of our large schools and workhouses,—such facts cannot fail to convince the most sceptical of its very contagious nature.

III. THE PREVENTION OF PURULENT OPTHALMIA.

This is a point of considerable importance, when the disease commences in a workhouse, in a military or naval hospital, or in a large school; the sick-list is daily increased by fresh cases of purulent opthalmia, and it becomes a matter of the very highest importance to decide on the best means of checking it.

When purulent opthalmia attacks a number of persons confined in a prison, or workhouse, or exists among individuals who of necessity are crowded together, as in military barracks or a school, it is most desirable at once to commence a series of regulations, with a view of diminishing, as quickly as possible, the extension of the malady. The first step will consist in separating the sick from the healthy, and in taking care that too many persons are not crowded into one apartment. The linen used in cleansing the eyes should be taken care of, washed in a separate tub from the other clothes, and only used by those affected with opthalmia. The eyes of all the inmates must be daily examined, and the individual separated from his companions the moment he is attacked. On the slightest appearance of discharge, the diet should be reduced, an aperient given, and the eyes washed with a weak solu-

tion of sulphate of zinc or alum. During the prevalence of purulent opthalmia, exposure to a bright sun, or a damp atmosphere, should be rigidly forbid. Thus, by removing those attacked, as soon as possible; by reducing the number of inmates in each ward, by the strictest attention to cleanliness and diet, the occasional use of purgatives, and the enforcement of the usual precautions for preventing the improper transfer of the contagious matter, when the disease appears in any public institution, we have it in our power to prevent in a great measure, its spreading through the whole building.

I may also remark that the beds, clothing, &c. of all the infected persons should be well washed with soap and water, and afterwards exposed to a very high temperature, which appears to have the power of destroying any property of infection in such articles.

Of course these suggestions are offered with all humility, since I have not as yet been called upon to treat the disease under these circumstances; still the mode of prevention now pointed out is sanctioned by the highest medical authorities in the kingdom, and certainly appears the most reasonable we can adopt to check the spreading of this most appalling affection of the eye.

IV. SYMPTOMS OF PURULENT OPTHALMIA.

1st Stage.—On going to bed or on awakening in the morning, the patient experiences a sense of stiffness in the eyelids; on examination the cilia are found loaded with a slimy secretion, very adhesive, and usually collected at the inner canthus, the conjunctiva is much thickened, and its vessels injected with blood of a brilliant colour. The thickening and elevation of the conjunctiva is frequently so great, that it protrudes through the lids, and even occasions ectropion.

2nd Stage.—The ocular or sclerotic portions of the conjunctive membrane, are next affected, and rapidly assume the deep crimson tint, the membrane being much thickened, appearing like a piece of crimson cloth; in various parts a peculiar secretion is now apparent, and if washed off with warm water quickly re-appears. The vessels of the conjunctiva, which at first could be very easily distinguished now become indistinct, and the thickening of the

membrane hourly increases, until it appears much raised around the cornea; the eye-lids are next rendered tense and painful, and the secretion of pus greatly increased. From the commencement, pain has been felt in the eye, and also more or less over the whole side of the head; the sufferings of the patient advance in severity as the disease marches onwards, the pain being more particularly severe just above the supra and infra orbitary foramina.

3rd Stage.—The chemosis is now complete, and the work of destruction much more evident: the strangulated cornea appears hazy, then opaque, then dull (something like the eye of a dead animal) in appearance, and altogether incapable of reflecting light.

There is in addition to all this a tense and painful state of the eye-ball, which feels too large for its socket. The cause of this is sufficiently clear: as the inflammation extends from the conjunctiva to the deeper seated structures, their secretion is augmented, and the increased fluid contents of the eye-ball, by their continued pressure on the containing parts produce that dreadful sensation of tension, from which the unfortunate sufferer so invariably, and so imploringly, solicits relief.

I ought to remark that when first the cornea becomes hazy, its brilliancy is not much disturbed; Mr. Tyrrell supposes "that the nebulous aspect results from a deficiency of the inter-laminar fluid, the secretion of which becomes arrested under the impeded circulation of the part."

This change is a very important one, as it always indicates the destruction of the cornea, which soon afterwards loses its vitality, and mortifies, either throughout its whole surface, or in parts.

The secretion from the eye, at first thin, colourless, and hardly tenacious, soon assumes a bright yellow hue and is much thicker, becoming gradually thinner, and more like water as the disease declines. The quantity of pus secreted is sometimes very great. Dr. Veteh informs us that in some cases under his care it amounted to several ounces in the twenty-four hours. By the quantity, colour, and other peculiarities of the discharge, the degree and progress of the inflammatory action are frequently well marked.

4th Stage.—The whole of the cornea is more hazy, more dense in some parts than in others; during the state of gangrene the conjunctiva remains moist and bright, but the moment mortifi-

cation commences that which covers the mortified part, becomes dull, and when the mortification stops, a well marked line divides the living from the dead, and the cornea in some degree recovers its transparency. This partial death of the cornea often extends over one half of its entire texture, in some cases over more, generally passing through all the laminæ, so that when the outer part is separated the anterior chamber is broken into and prolapsus of the iris takes place.

This condition of the cornea is not produced by an extension of the inflammatory action to it; the cause is purely mechanical; mortification being the result of strangulation, by which its supply of nutritious fluid is cut off: and this becomes more apparent when we call to mind, that the cornea for the most part derives its supply of blood from vessels passing through its conjunctival covering; this is clearly seen, in morbid condition of those structures; on examining a case of corneitis, or strumous opthalmia, the larger vessels may be observed ramifying in the conjunctival layer, and sending small branches to the texture of the cornea.

V. EFFECTS OF PURULENT OPTHALMIA.

In examining the symptoms, the effects of the disease have become apparent; such as *opacity*, *ulceration*, *bursting*, *staphyloma*, *and sloughing of the cornea—prolapse of the iris*, *suppuration and collapse of the eye-ball*, *&c.*

The cornea is rendered opaque, either by inflammation of its texture, or irritation of its surface:—it may burst from impaired resisting power, ulceration, or loss of substance, and sloughing. The cause of sloughing of the cornea has already been pointed out, viz. interruption to its nutrition; staphyloma may result from the power of the cornea being impaired or from some change produced in its texture.

Prolapse of the iris from sloughing of the cornea frequently deprives the patient of sight; when the opening is small, if the ulcerative process cease, the protruded part is now and then returned by the application of the nitrate of silver, or extract of belladonna; but in either case it may slough and constitute *synechia anterior* by becoming adherent to the sides of the ulcer.

Suppuration of the eye-ball is always followed by collapse of the globe, but after purulent opthalmia in some few cases this part wastes away without any assignable cause.

These are the modes in which purulent opthalmia terminates; if allowed to run its course, it ends in the death of the organ; the moment this is accomplished the disease subsides; when mortification of the cornea has taken place the pain abates; the tension is removed from the lids, the discharge becomes watery, in fact the disease appears exhausted as soon as the destruction of the eye for visual purposes is accomplished.

VI. TREATMENT OF PURULENT OPTHALMIA.

Enough must already have been written to convince even the youngest tyro, who never heard of the disease before reading the above remarks, that it is one not to be trifled with, one that can only be subdued by the most prompt and vigorous treatment. Much depends on the stage at which we are called to attend the patient, for at first there is nothing either in the aspect of the disease, or the constitutional symptoms to excite alarm in the patient or his friends. He may go to bed feeling somewhat uncomfortable; by morning the eye may be all but dead to the stimulus of light—by evening complete mortification of the cornea may have taken place, and the patient deprived of sight, without the possibility of recovery.

The progress, to a termination like this, often occupies two or three days, but still the danger to the organ is so great when once the disease is established, that every attention should be paid to the treatment until the morbid action is completely arrested.

Bleeding.—In females during pregnancy, in those of an advanced age, scrofulous diathesis or very feeble powers, severe bleeding must not be resorted to. We must be content with leeches, purgatives, mercurials, and emetic tartar, for if the patient is brought much below par, in any case, by large and repeated bleedings, the vitality of the cornea will be destroyed, and blindness inevitably follow. I am aware in expressing this opinion, that it is contrary to the advice of many authors of the greatest eminence: Mr. Peach strongly advocates large bleedings even *ad*

deliquium animi, "I have taken," says this gentleman, "in one case, 77½ ounces; 60 ounces very frequently, enjoining perfect rest, avoiding the smallest portion of animal food, and putting in practice every other part of the antiphlogistic treatment."

But was the plan sufficiently successful in the hands of this gentleman to induce us to adopt it? I think not, for he tells us, "that after finding large bleedings useless, I tried stimulants, but being still more unsuccessful, I reverted to the antiphlogistic plan in its fullest extent."

"I have in many cases of Egyptian opthalmia," writes Mr. FARREL, "taken from thirty to fifty ounces of blood in the space of the first twenty-four hours of the disease."

Out of many thousand cases treated by BARON LARREY, not one lost his eye-sight. The essential part of his treatment consisted of general and local bleeding.

Mr. Middlemore, of Birmingham, also, strongly advocates the propriety of bleeding in this disease, but concludes with this very useful caution. "Let me not forget to remind you that although this plan of treatment has been recommended for the cure of that acute form of the disease, which is occasionally prevalent, you will be much more commonly called upon to conduct the management of cases, the symptoms of which are so little severe, that slight attention to the habits and diet of such patients, the administration of a few doses of purging medicines, the use of an astringent lotion, and the application of the unguentum plumbi, to the tarsal margins, will be comprehended every measure, which may be required for their cure."

"The acute stage will require the lowest scale of diet, somewhat more judiciously selected than ordinary, and the state of suppuration of the globe, and sloughing of the cornea, will frequently demand, always indeed where the vital powers are much depressed, the use of a nutritious and stimulating diet."

A student examining the different authorities on this subject, cannot fail to be puzzled as to the mode of treatment he ought to adopt in cases of purulent opthalmia, if he opens Mr. BACOT'S work (page 134) this advice is given; "if ever there was a disease in which blood ought to be taken away it is this,"—on the contrary Dr. SHORTT, a very high authority, who had hundreds of cases under his care, both in the military hospitals in Sicily, and

Egypt, informs us that he "carried bleeding to a very great extent—to the extent of removing in some instances TWO HUNDRED OUNCES OF BLOOD, *and often without checking the progress, or mitigating the severity of the disease.*" Dr. O'Halloran writes, "I can safely say that the abstraction of blood will be rarely necessary in acute purulent opthalmia, if the plan advised, viz.—the local application of the sulphate of copper be strictly attended to, and moreover am of opinion that if an enquiry be instituted among the army surgeons, it will be found that those who used the greatest depletion were the least successful, and that sloughing, ulcers, &c. more frequently succeeded the evacuating plan than when the patient was partly left to nature."

I have already expressed, pretty strongly, the conviction, that the large bleedings recommended by some authors, are not only unnecessary but even injurious, and this will appear the more plainly if we admit, that death of the cornea, is not produced by an extension of the inflammation to it, but purely from a mechanical cause, by which its proper supply of food is prevented. Will bleeding remove this? I have seen patients bled again and again, until the last drop of the circulating fluid that could be taken without danger to life has been abstracted, and yet the disease run on to a fatal termination; I have done so myself armed with the learned authority of books, and fortified by references to men in high repute, and have had to regret it most deeply. In all cases where we have a robust constitution, quick full pulse, and vigorous circulation, blood must be taken freely, and the quantity drawn sufficient to make a visible impression; with this we must be satisfied, it is no use to go on bleeding, until the powers of life are reduced as low as possible, those who adopt this practice will in the end most deeply lament it.

I should indeed be guilty of the greatest possible presumption, thus freely to express my opinion did I not support it by competent authority. When I mention the name of Mr. Tyrrell (senior Surgeon to the Royal London Opthalmic Hospital, Surgeon to St. Thomas's Hospital, &c. &c. &c.) and also my much respected friend, Mr. Middlemore, as strongly sanctioning the opinion already expressed, I am certain it will carry conviction to every mind unbiassed by pre-conceived notions.

"I am satisfied," says Mr. Tyrrell, "that the excessive depletion

I formerly adopted, and witnessed, *has often tended to hasten the unfavourable termination* of the disease. During some years, in which I had opportunity of seeing these cases, I did not witness a *single instance* in which the *cornea altogether escaped;* but a partial or entire slough of this texture invariably took place, when the chemosis was complete, in spite of the most active general and local depletion, or the local application of strong stimuli or astringents, as recommended by some surgeons. I had reason therefore to dread such cases, and was annoyed and distressed whenever one presented itself to my notice" (page 69).

He then proceeds to relate the case of a poor man named Death, of good constitution, about forty-five years of age, and without any morbid diathesis, who applied at the Opthalmic Hospital with acute purulent opthalmia in both eyes resulting from exposure to damp and cold. He was immediately bled very largely until he fainted, during the day thirty leeches were applied—in the evening although thirty ounces of blood had been taken from the arm, and several ounces more lost from the leeches he was again bled; this relieved his pain, and diminished the deep red colour of the conjunctiva. Severe pain and sense of fulness returned in two hours; " the whole of each cornea sloughed off and irrecoverable blindness ensued."

In acute purulent opthalmia, in a robust patient, it is advisable to bleed freely, by which the chemosis will in some degree be diminished and the pain and tension of the eye-ball relieved. After this apply a quantity of leeches close to the margin of the lower eye-lid, and give five grains of calomel, followed by purgatives. *Tartar emetic, colchicum, and digitalis* may also be administered to keep the circulation within bounds.

When the chemosis is considerable, acting like a tight band around the cornea the chemosed parts must be freely divided, so as to remove the tension from the conjunctiva, which no doubt mechanically cuts off the circulation from the cornea. Care must however be taken, that the incisions are made in a proper manner;—that is, beginning at the circumference of the cornea towards the edge of the orbit in a direction as rays radiating from the centre of a circle; the transverse and perpendicular diameters of the eye must of course be avoided.

If, in ignorance of the organization of the part, deep incisions are

drawn quite round the edge of the cornea, the whole of the vessels passing to the corneal portion of the conjunctiva are cut off and the very mischief produced that the operation was undertaken to obviate. As soon as the operation is performed the eye must be freely bathed with warm water; it will generally bleed for some time, by which the patient is much relieved, the part losing its deep carmine colour. After the operation it may be necessary even to take more blood, either from the arm, or by the application of a quantity of leeches; for although very large and repeated bleedings have been objected to, I am fully convinced that depletion is necessary, and it would indeed be foolish to trust to local applications only, in one of the most acute diseases to which the human eye is subject; this applies more particularly to those cases of specific origin, which ought always to be more actively treated than the idiopathic.

Locally.—The head must be supported with pillows and kept high above the chest; leeches applied, the angular vein opened, or a cupping glass placed on the temple, or behind the ear; after the general and local bleeding, a blister behind both ears or to the nape of the neck, will frequently afford great relief, more particularly in cases where bleeding cannot be carried to a very great extent. The eye should be frequently washed with warm milk and water, the warmth and moisture much abates the pain, by relieving the vessels, and in some degree shields the surrounding parts from the excoriating discharge; during the whole of the treatment some zinc ointment should be applied to the cilia and canthi after removing the discharge.

At first the eye may be bathed with this lotion:—

℞ Alumen ..... ʒss—ʒiss
Aq. Rosæ ..... Oi

M. fiat collyrium, quo concusso imbutum linteum quadruplicatum imponatur oculo ad fecto.

This can be applied warm, or cold to the eye, the feelings of the patient will of course decide which is most agreeable. After the first day a solution of sulphate of zinc must be substituted, and then the nitrate of silver ointment or drops. Some surgeons are in the habit of applying the most powerful stimulants to the eye from the first, such as the nitrate of silver or the sulphate of copper; however useful towards the conclusion of the disease, I am satisfied, after having seen them used very extensively, that the

practice is not a good one; to say the least of this plan, it is very equivocal, both painful and uncertain in the effects produced, and if solely relied on, the disease frequently makes much progress before its injurious tendency is discovered, and then it is perhaps too late to resort to that treatment which experience has pronounced the most efficient.

CASE V.

Feb. 8, 1842.—W. W. æt. 16, employed on the farm of the Right Hon. Earl Spencer, at Wiscton, was brought to me with purulent opthalmia of the right eye, which had continued for two days. During the first day he was enabled to attend to his usual duties, but gradually got worse, and when I saw him, he was in a most deplorable condition. This case has already been alluded to, and was evidently the result of gonorrhœa. The disease had reached the second stage, the secretion was very profuse, and the eye-lids so swollen that it was with the greatest difficulty a view of the cornea could be obtained. The cornea was already hazy; the boy complained of very great pain in the eye-ball, extending along the face and head; the pulse was strong and full, the bowels confined, and tongue loaded. He had no discharge from the urethra, but had slept with a man who was suffering from acute gonorrhœa. I immediately divided the chemosed membrane very freely, and gave an active dose of calomel and colocynth, ordering the eye to be constantly bathed with warm water. As soon as he got home, sixteen ounces of blood were taken from the arm; and one grain of calomel and one of opium given every six hours. I saw him again in the evening, the operation appeared to have in some degree relieved the eye, but not sufficiently, the chemosis was therefore divided still more freely, and the bleeding encouraged by warm poppy fomentations. The head was raised, and the eye ordered to be constantly washed with a very weak solution of alum and water; thirty leeches were placed upon the lower lid and around the eye.

9th.—There was much pain in the eye this morning, and some increased thickening around the cornea, the chemosis was therefore again divided, and a small portion removed, after which V. S. ℥viij.

10th.—The boy is much better this morning, the chemosis has greatly subsided; the gums are slightly affected. To leave off the calomel and opium.

℞ Magn. Sulphatis 3i
Infusi Rosarum 3x
Tr. Card. Co. 3ij
M. ft. haustus ter in die sumendus.

℞ Pulv. Doveri .....gr. x h. s.

A blister to the back of the neck.

11th.—Decidedly better. The tumefaction of the palpebræ so much reduced, that he can open the eye, so as to expose the cornea without assistance, the chemosis is much less, and the colour of the conjunctiva has faded from a bright crimson to a delicate pink.

℞ Argent. Nit. .....gr. i
Aq. Dist. 3i
Sigr. One drop to be put into the eye three times a day.

The other eye was slightly affected, but not sufficiently so to occasion any uneasiness; the lad perfectly recovered without even a spot upon any part of the cornea, although much reduced, from the active measures adopted.

The plan of treatment, therefore, that appears most successful in purulent opthalmia, consists, 1st, in the general and local abstraction of blood, when the force of the circulation is greater than natural,—2nd, in the use of purgatives, &c. for bringing down the plenitude of the system when necessary,—3rd, in the use of slightly astringent and afterwards of stimulating lotions,—4th in regulating the extraction of blood, and the administration of calomel, emetic tartar, &c. &c. to the strength, sex, and age of the patient, care being taken not to reduce the powers of the constitution too much,—5th, IN RELIEVING THE STRANGULATED CORNEA AS SOON AS POSSIBLE, IN ALL CASES, BY FREELY DIVIDING THE CHEMOSED PART.

II. PURULENT OPTHALMIA IN THE INFANT.

The symptoms of this disease in the infant are not materially different from those in the adult, the nature of it however is materially modified by the more delicate textures, as well as the much greater vascularity of the parts affected, and the more inti-

mate connection subsisting between the vessels of the conjunctiva and the sclerotic coat. * Dr. Vetch is of opinion that from this cause, the sloughing and ulceration of the cornea occur earlier in infants than adults. When the œdema ceases the inner surface of the palpebræ becomes sarcomatous, and this diseased surface, when the eye-lids are opened, forms an exterior fleshy circle beyond which the relaxed conjunctiva of the eye, comes forward as a second; and frequently the caruncula lachrymalis adds still further to the valvular appearance that the part presents. During the night the eyelids become closely glued together, and so firmly adherent, that in the morning they cannot be opened until well washed with warm water. When separated the cornea is completely concealed by the discharge. If the inflammation is not checked one or more of the following changes will be produced. *Sloughing or ulceration of the cornea, ulceration of it and prolapse of the iris, and adhesion to the ulcerated cornea. Opacity of the cornea.*

The inflammation commences with a straw coloured discharge about three days after birth; the suffering of the little creature is doubtless considerable, but of this we can only judge by its cries and restlessness. It has been known to appear in a few hours after birth, and even as late as the sixth or seventh week of infant life. It arises either from a morbid vaginal secretion in the mother which becomes applied to the conjunctiva of the child, from a purulent secretion from the urethra of the mother, or from exposure to damp and cold.

TREATMENT.

In the first stage it can easily be checked and removed by cleanliness, and the constant use of some astringent; the moment any of the yellow discharge is seen at the corners of the eye, it should at once be removed with warm milk and water, and afterwards washed with the alum lotion; I have often seen cases of this kind thus treated and never knew the plan to fail in a single instance.

In the second stage when the ocular membrane becomes affected, the eye-lids are thickened and assume a vivid lustre and shining

* Page 256—258.

character, the extent of these symptoms being in proportion to the chemosis. If called in at this stage, although the surgeon cannot obtain a view of the cornea he may always know when it is safe by the aspect of the palpebræ so long as they remain swollen and tense, and present a shining surface, the cornea is safe, even though on the very brink of destruction; but the hour its vitality ceases the swelling of the lids subsides, the bright shining aspect vanishes, and the colour fades into a dull purple. In this state of things, that is while the brilliancy yet remains, a leech or two should be applied to the surface of the eye-lid, and by encouraging the bleeding with warm water the palpebræ will soon be sufficiently reduced to enable us to obtain a view of the cornea. After a sufficient quantity of blood has been extracted a warm solution of alum should be constantly used, and some mild ointment smeared upon the cilia and lids.

I have had many infants under my care in various stages of the disease, and this plan of treatment has happily preserved many eyes. If the cornea is hazy in part or all over, Mr. Tyrrell advises the division of the chemosis, but if the directions already given are attended to, this very severe step will seldom be required. I have never done this, nor has Mr. Tyrrell, still he "earnestly recommends the division of the chemosis as soon as a fair view can be obtained of it should the cornea be found hazy in part or all over, indicating commencing mortification."

I will only add in conclusion that in every case of purulent opthalmia either in the adult or infant, the examination of the organ should be conducted with the utmost care and gentleness; the care displayed by Isaac Walton in the preservation of the life of his frog will be well employed in the management of these cases; all pressure on the globe of the eye must be carefully avoided, and if any—even the minutest molecule of the cornea be found alive, it must be saved; at any rate no exertion must be spared to effect so desirable a purpose, and any trouble will be amply repaid if crowned with success. I have in another part of this chapter mentioned a case in which the loss of sight followed the rough examination of an ignorant practitioner, the delicacy of organization exhibited by the eye calls for a corresponding degree of delicacy in an examination of it.

I have not spoken at any length of the treatment of certain

terminations of the disease, these remarks being rather directed to general principles of practice. The management of some of them, such as opacity of the cornea, &c. &c. &c. has already been described, and the student will find all the required information concerning the others in any systematic work on diseases of the eye.

[On reading over what I have already written on the division of the chemosed parts in purulent opthalmia, I think I have hardly done sufficient justice to the claims of Mr. Middlemore, who certainly was the first to point out the advantages arising from a free division of the strangulated parts. He informs me in a letter received this day, that "after having tried to treat the acute forms of purulent opthalmia by means of copious depletion and by other methods I have arrived at the conclusion that the most *safe* and *certain* method is that in which free depletion and various local applications are both practised at the same time. I say this particularly in reference to acute purulent and gonorrhœal opthalmia, and a vast mass of *recent authority*, both foreign and domestic, is in favour of this view. You tell me 'that the greatest danger to the cornea is to be apprehended, not from inflammation, but from the strangulation of its vessels by the chemotic swelling.' You will find, by making the annexed references to my Treatise, that this latter fact was first pointed out by me, and that *I* was the *first* to insist upon the importance of the prompt reduction of the chemotic swelling on the very ground I have now explained. Mr. Tyrrell was so good as to send me his paper published in the Medico-Chirurgical Transactions for 1838, and, in my reply of thanks, I pointed out to him, that his views in reference to the death of the cornea from the swelling (chemosis) were anticipated by me in my Jacksonian Prize Essay, for the year 1831—in my Lectures published in the Medical Gazette for 1832 and 1833—and also in my Treatise, (see references and extracts.) My claim to this advance in an important department of the pathology of the eye was admitted soon after Mr. T.'s paper appeared, without one word from me (for I always intended and still intend to protect myself in *the new edition*,) by the Editor of the Med.-Chi. Rev.; by Mr. T. Wharton Jones in his controversy with Mr. Tyrrell, published in the Med. Gaz.; by Mr. Lawrence in the last edition of his Treatise; by the Editor of the Lancet in his

review of Mr. Tyrrell's work on the eye; and subsequently by Mr. Tyrrell himself, in the controversy with Mr. Wharton Jones. Mr. Tyrrell can fairly lay claim to the radiated incisions, but whether they are in all instances safe and practicable, and whether they are better than the curved or semi-lunar ones which stop short of the greatest diameter of the eye, are questions I cannot as a *practical man* answer in the affirmative."

The references to which Mr. Middlemore alludes will be found in his treatise on the eye. Vol 1, pages 61, 124, 151. At page 183, he says, "If the cornea perish in consequence of the existence of chemosis, its external layers first perish because the circulation of that part of its outer (conjunctival) covering, through the medium of which it obtains its vascular supply, is destroyed: but this effect (death of the cornea) may not take place throughout the whole of its external surface, first because the pressure of the chemosis, and consequently the strangulation of the circulation may be partial, or its progress arrested, &c." Again, Vol. 1, page 141, "Chemosis sometimes induces gangrene of the cornea," and when speaking of chemosis, in the course of his remarks on gonorrhœal opthalmia, he insists on "the great importance of scarifying the chemosed surface, and employing all proper available means of lessening without delay the conjunctival tumefaction (chemosis)" on account of its injurious influence upon the cornea, and particularly upon its external layers. These opinions were held in his Prize Essay for 1831—whereas, Mr. Tyrrell's work did not appear until the year 1838—Mr. Middlemore therefore unquestionably first pointed out the cause producing death of the cornea, at the same time Mr. Tyrrell was, I think, the first to draw the attention of the profession to the best method of removing the chemosis.]

INJURIES OF THE CONJUNCTIVA PRODUCED BY ESCHAROTICS.

The most frequent injury of this kind results from the contact of lime or mortar accidentally thrown into the eye. Now and then we see a case in which the eye has been severely injured by some powerful acid, heated iron, or lead. The history of the case prevents all risk of mistake, the patient being always aware of the cause of injury. One of the most severe cases of this kind I almost ever saw, was with my friend Mr. Allison: the injury had

been produced by strong liquor ammonia. Mr. Allison, before I was called in, found his patient suffering from severe pain in the head, and the symptoms were certainly such as justified the opinion he had formed, viz. that the inflammation had extended backwards from the orbit to the brain; to the judicious treatment employed by this gentleman in the first instance, and to his care and assiduous attention afterwards, the favourable termination of this very interesting case must undoubtedly be attributed.

The form of escharotic which has occasioned the mischief will produce some difference in the symptoms. If *lime*, little rounded particles will be seen sticking to the eye-lids, and those parts of the cornea on which they rest will be opaque. If the exciting cause has been a very powerful acid, the inner surface of the palpebræ exhibits the effects of the escharotic, in all probability extending more or less over the face. The clothes will also be spotted with it. Should the injury have been occasioned by a small portion of heated iron, or molten lead, both the eye-lids and cheeks will often have suffered in the same way as when an acid has been applied. The effects upon the conjunctiva are the same as from lime, but the pain is not nearly so severe nor of so long duration. The parts first coming in direct contact with the heated fluid are swollen, dull, and surrounded by a zone of inflammation, but it will require even lead to be applied of considerable heat in order to destroy the conjunctiva.

TREATMENT.

This will depend upon the exciting cause. If the mischief result from *lime*, wash the eye as quickly as possible with a very watery solution of vinegar; this at once decomposes the lime, annihilates its caustic property, and immediately dissolves it, and thus takes away its power of acting as an irritant. After injury from a strong acid, apply a solution of sesqui-carbonate of soda, and if this cannot be obtained soap and water answers very well. If heated iron or lead has occasioned the injury, remove the particles at once, if any remain sticking in the cornea or under the eye-lids, and treat any inflammatory symptoms that may arise in the usual manner. These cases are always very distressing and often, more

or less, injure the organ notwithstanding the most judicious management. When the sloughs of dead matter are thrown off, the granulating surfaces both on the eye-ball and palpebræ, being opposed to each other, there is risk of the two surfaces uniting, unless the greatest care be taken to prevent it. The granulations must therefore, from time to time, be broken up with a probe and this plan repeated until a new mucous membrane is produced. If the corneal surface has suffered, indelible opacity usually remains, because the new formation is much thicker and more dense than the original membrane.

OPACITIES OF THE CORNEA.

It is very important to distinguish, as nearly as possible, those opacities of the cornea which are likely to be removed by the unaided efforts of nature, from those which cannot be dispersed without the assistance of art, and also to ascertain the proper season for commencing the use of remedies, for, if there be any external inflammation, an irritable state of the eye or of the general health, or if the opacity be the result of chronic corneitis, it would be unadvisable to apply local stimulants until these affections are removed. I remember a boy that was brought to me, in which there was considerable opacity of the cornea from the application of lime; the boy said "he had been bled, and leeched after which he had used some drops." The accident took place about ten days before I saw him, and he had been using the nitrate of silver drops for a week, this stimulating plan of treatment not only occasioned great agony, but produced a permanent opacity which could never be removed. In the Lancet for October 1834, a case is related in which a very extensive opacity, of nearly the whole cornea was removed by the unassisted efforts of nature, and other instances of the unexpected restoration of vision may be found recorded in Medical Journals; still I cannot but suppose, that in the majority of these cases, the want of transparency on the part of the cornea has been the product of continued inflammation, and that the return of translucency was produced by the mere subsidence of the corneitis.

Platerus observes "that an odd accident happened in his

time, by the surgeon's mistake; having sprinkled the fine powder of sugar-candy upon the cornea of a child's eye in order to remove the speck thereon, intercepting the sight in a great measure, at one time took out of the wrong box the powder of sublimate, whence immediately ensued so great fluxion and inflammation, as endangered the whole eye; but straight endeavouring to rectify his error, and take off the disturbance; the patient, as it happened, was so far from being injured that the cicatrix being merely deterged, the sight was again restored by removal of the said speck, an argument that the globe of the eye, or its coats are able to bear strong applications." Mr. GUTHRIE has revived the opinion of Platerus, "*that the eye is able to bear strong applications*," and so fully convinced is this gentleman of their importance, that we find him, in the preface to the first edition of his work on "Operative Surgery of the Eye" thanking his Creator with the most devotional piety, for rendering the eye-ball nearly insensible.

During the time I was in Paris, I frequently witnessed the practice at the Hôtel Dieu, of applying calomel to remove the opacity of the cornea, and it was certainly very successful. DUPUYTREN states, "that those opacities of the cornea which are recent and slight, are completely dissipated in one or two weeks; specks of a longer standing, thicker and broader, usually disappear in a month or six weeks; and I have seen some, which occupied nearly the whole cornea, and obstructed the entire pupil, completely intercepting the light, disappear entirely in the course of a few months." A solution of the *sulphate of cadmium* has been strongly recommended by GRAEFE, ROSENBAUM, and TOTT, for this purpose; the opaque spot being touched three or four times a day with a solution of this substance, in the proportion of half a grain of the sulphate, to an ounce of distilled water. I have never used it, and never seen it used, therefore, can offer no opinion of its merits. It has been used a good deal at the infirmary, Birmingham, and the result of repeated trials led to the conclusion that the effects of this remedy upon the disease are very manifest, but more slowly manifest than those produced by a solution of corrosive sublimate.*

Opacities of the cornea arise from a variety of causes and admit of division into three classes:—

* Middlemore, page 753.

I. Cases in which the disease results from the original structure being destroyed by sloughing, or ulceration, followed by a deposit of opaque matter, forming a cicatrix.

II. Cases in which opacity is produced by the application of some powerful escharotic.

III. Cases in which opaque matter is deposited upon the texture of the cornea, without any previous loss of structure.

TREATMENT OF OPACITIES OF THE CORNEA.

Simple *nebula* of the cornea may be easily removed by a solution of nitrate of silver, or in more severe cases by the following drops.

℞ Hydrarg. Bi-chloridi ..... gr. ij
Aquæ Dist. ..... ℥i

It is a curious fact, that after the application of any of the usual stimulants employed for this purpose, in a few weeks, they appear to lose their effects, the eye as it were, becoming invincible to them. It is therefore better to use the nitrate of silver drops for a few days; then a solution of the bi-chloride of mercury, then the vinum opii, which plan secures the unimpaired virtues of each. The effects produced by these various stimulants are different in almost every case, and it will be for the surgeon to regulate the precise strength capable of being employed without causing inflammation. The worst form of opacity we are called upon to treat, is *leucoma*, and I at once admit, that when this arises from extensive ulceration, which has altogether changed the nature of the corneal substance; or when extensive opacity is the result of some powerful escharotic, which, although it may not destroy the vitality of the part, appears to have produced some chymical change in its structure, it is useless to attempt the cure of such an affection. Still, although this opacity cannot be destroyed by any means at our command, or removed by a surgical operation, this admission only applies to the central portion of leucoma. In time its edges, on examination, will be found less opaque, and a halo of hope surrounds this dimness of vision, and although the more dense central portion does not admit of cure something may be effected with the surrounding edges. I have certainly seen cases where a steady continuance in the application of reme-

dies has produced very great benefit, and the results are doubtless sufficiently favourable to justify their employment in all such unfortunate cases. I advise most strongly the nitrate of silver ointment, of a strength regulated to the peculiar condition of the affected eye, and also the continued use of counter irritation, behind the ears or at the nape of the neck. I also think that the regular application of this ointment ought to be combined with the internal use of mercury, and a slight degree of ptyalism kept up for a considerable period.

℞ Pulv. Argenti Nitratis..... gr. x
Liq. Plumb. Diacetatis .... ♏xx
Adepis ..... ʒi
ft. ungt.

This ointment should be used every night or every second night; it always creates more or less opthalmia, and its application must be regulated accordingly.

The preparation of mercury most useful in these cases is the hydrargyrum bi-chloridum, I have given it for six or eight weeks in the following form without severe affection of the gums, irritation of the bowels, or any symptom which made it necessary to intermit or reduce the doses.

*℞ Liquoris Hydrarg. Bi-chloridi ʒiss
Tr. Cinchonæ ..... ʒij
Aquæ Dist. ..... ʒviiss
M. ft. haustus ter in die sumendus.

I ought to add that in some cases where neither the drops of the nitrate of silver, nor the ointment of this substance can be borne, the ointment of the iodide of potassium may be substituted; but although useful in some cases, it is not nearly so efficacious as the preparations already mentioned.

[Since writing the above Mr. Carmichael of Dublin has kindly sent me a number of the Dublin Medical Press, in which he states that he "published in 1808, a paper on opacities of the cornea, intimating that from inductive reasoning, I employed a remedy—nitrate of silver, in solution, for this disease. I believe this was its first application, in cases of nebula or leucoma, since, however, become so general, that Dr. Jacob, whose extensive practice in diseases of the eyes is well known, remarks, somewhere, that in

* It is better to commence with a small dose. The form used is that in the Pharm. Lond. 1836. I have the notes of a case in which six drachms of the Liq. Bi-chlorid. were taken daily for six weeks, and without even affecting the gums.

almost all cases of opacity of the cornea, for which he is consulted, he finds the conjunctiva stained with that peculiar slate colour which the nitrate of silver imparts. Now, if it had not been generally found beneficial, it is not likely that it would have been thus extensively employed, but the following passage sufficiently indicates the motives which first induced me to employ this, as well as some other preparations :—

"The lymph deposited on the cornea, and which creates the opacity, is similar to the lymph which is deposited by the other membranous parts of the body, when they are in a state of inflammation ; but when first deposited it is not organised, and does not become so till vessels shoot into it, and form a network ; consequently, till this event, it is equally obedient to chymical agents as dead animal matter ; but, in order to discover the chymical agents most likely to affect it, so as to change the disposition of its integral particles, and render it unfit for the purposes designed by nature, a bed for the production of vessels, we must fix our attention on the principles of which it is composed, and these have been sufficiently ascertained to be albumen and gelatin.

"Dr. Bostock, to whom animal chymistry is so much indebted, has given us the most useful chymical tests for the discovery of the different primitive animal fluids, and by his experiments demonstrates, that a solution of oxymuriate of mercury, or nitrate of silver, is the surest test for albumen, tannin for gelatin, and aqua-lythargyri acetati for mucus ; the three first of the preparations I have been in the habit of employing near two years with the happiest effects. I use each of the two former, in the proportion of two grains dissolved in one or two ounces of distilled water, and the latter, by making a strong infusion of tannin, or of galls, which contain a considerable portion of that substance. Any of these collyria being dropt into the eye, occasions white flakes immediately to fall like a precipitate to the bottom of the orbit, and on its running again from the eye, it exhibits a milky appearance, while the sight becomes clearer when the smarting diminishes, as the patients universally declare. A portion of those flakes may proceed from the muriate of soda contained in the tears ; but they must be chiefly composed of the albumen and gelatin suffused over the cornea, and creating the opacity, or the patient would not be otherwise so immediately sensible of the improvement of his sight, after the precipitation takes place.

"The solution of oxy-muriate of mercury, or of the nitrate of silver, produces a greater precipitate than the tannin, and this circumstance demonstrates that there is more of albumen than gelatin in the lymph spread over the cornea in this disease.

"These collyria, however, I am in the habit of using alternately, for by this means each of those substances, if present, must come under the influence of that body which will act most powerfully upon it. I usually direct one or other of those fluids to be dropped into the eye, four or five times a-day, if inflammation is not produced, and also desire my patients to wash their eyes frequently

with an infusion of oak bark, with the view of having the double effect of a chymical action on the disease, and of producing a tonic effect on the vessels of the conjunctiva, which usually, in this complaint, exhibit that state termed passive opthalmia.

"By these means I have had numerous instances, not only of the disappearance of the lymph, but (more than I had reason to expect,) of those vessels which I had daily for months endeavoured to remove by the knife."*

PTERYGIUM.

The name of this affection of the eye is derived from πτέρυξ, a wing; it is seldom seen by the surgeon in its incipient state and very frequently acquires a considerable magnitude before the patient solicits relief; it arises without pain, and is of very slow growth; in the end, however, it creeps from the corner of the eye over the whole cornea, and the vision becomes impaired, and at length altogether obscured. Unless affecting the conjunctival covering of the cornea, the disease only produces a trifling deformity and does not occasion any impediment to vision. It always assumes a triangular form, which says Scarpa, "ought to be referred to the adhesion of the laminæ of the conjunctiva becoming stronger as it advances from the circumference towards the centre of the cornea." It is a disease which generally makes its appearance at, or beyond the middle period of life; it has however been noticed shortly after birth, and I have at this moment two cases of it under my care, one in a young lady of seventeen, the other in a boy of twelve. In the boy, it followed an attack of inflammation induced by some lime which had been thrown into the eye, and this certainly strengthens the opinion of Beer who believed that lime or stone dust produced pterygium, as he most frequently saw it in masons' labourers. There are three varieties of pterygium:—

I. The Adipose.

II. The Fleshy.

III. The Membranous.

The first is a white soft texture, something like dirty fat, the second resembles muscular fibre, and the third variety exhibits a

* For a minute and beautiful description of the anatomy of the cornea, the reader will do well to consult the paper by Mr. T. Wharton Jones in the Cyclopædia of Practical Surgery.—Vol. 1, page 831.

thickening of the ocular conjunctiva with two or three large vessels meandering upon the diseased mass.

These are the only varieties I shall notice. I have never seen a carcinomatous or malignant pterygium and in all probability never shall. Beer remarks "that Scarpa's belief in the existence of cancerous pterygium requires confirmation, Mr. Travers does not even mention this form of the disease, and Mr. Middlemore "is not inclined to admit the existence of such a variety." Of course no one attempts to deny that this, in common with many other morbid growths, however simple at first, may become malignant from improper management, &c.

TREATMENT.

In the treatment of this disease astringents and escharotics are of little use, and frequently do more harm than good, much time is lost by their employment, during which the disease daily advances, and in the end it is discovered that it ought to have been removed at once, instead of wasting weeks, perhaps months, in such inefficient trifling. The removal of the diseased part ought at once to be recommended; this caution is however necessary, viz. that the part of the morbid growth extending over the cornea must not be incised; should the surgeon incautiously do this, during the healing of the divided parts, an opaque deposit will take place, which may prove even worse than the original disease

CASE VI.

Miss U—, residing near Tuxford, consulted me for a pterygium, growing from the outer corner of the right eye, extending over two thirds of the cornea. This young lady was requested to sit in a chair, and whilst an assistant separated the lids, I passed a narrow-bladed knife, having its cutting edge towards the cornea, between the pterygium and the sclerotic coat; the pterygium was then separated from the sclerotic as far as the margin of this transparent structure, and the flap thus formed was raised by a little hook and cut off with a pair of scissors. The eye was washed

with warm water, and after a day or two with mild astringent lotions; some ragged portions of the conjunctiva were afterwards removed with the scissors, which I think a better, and far less painful plan than attempting to destroy them by powerful caustic substances.

After the operation, the eye-lids must be closed, but not tightly fixed upon the globe, with a bandage; the granulations encouraged or repressed as circumstances may point out, and care taken that the eye-lid does not become adherent to the eye-ball.

There are other modes of performing this operation. Mr. Middlemore employs both a scalpel and probe-pointed scissors; others pass a curved needle and ligature beneath it, to obviate the risk of wounding the eye-ball; in this, as in every other operation, many plans have been proposed; knives, concave and convex, blunt and sharp, spear and probe-pointed, lancets and scissors, needles and ligatures, have all their respective advocates, but the plan I have ventured to propose, is very simple, and can be very easily performed if the hand is steady, and if it is not so, the sooner a man gives up operating the better, both for his own sake, and also for that of his patient.

Pterygia are more frequent in warm climates than in this country; it very often happens that the disease which has been advancing slowly for years stops at the edge of the cornea, and spreads no further during the life-time of the patient. Under such circumstances I strongly advise that no operation should be performed: as the disease gives no trouble it ought to be left to itself, an operation only being required when it encroaches on the transparent portion of the eye.

CASE OF MALIGNANT DISEASE.

Each stage of existence, each period of life appears to have certain diseases peculiar to it: thus, one of the well-known characters of carcinoma in general, is to attack persons advanced in life, rather than children, and others under the age of puberty. It follows, therefore, that the remark of Desault, that "*cancer of the eye is most frequent in children*," appears at first sight a position inconsistent with the usual nature of that disease. Still,

it is a statement difficult to contradict, supported as it is by the testimony of Bichat, who affirms, "*that in twenty-four persons affected with what is called carcinoma of the eye, twenty at least are under twelve years of age.*" Here, the truth, as in many other questions relative to disease, would never have been attained without the assistance of morbid anatomy, which prevents our confounding distempers, which bear some resemblance to each other, but which are in reality altogether different. We are much indebted to Mr. Wardrop for his interesting observations,* in which he has clearly proved that the disease which renders a severe operation so frequently necessary in children is not *true cancer*, but what is now termed *fungus hæmatodes*. Scarpa † remarks, "this author has afforded a solution of the question, by showing from careful observation, founded upon pathological anatomy, that the morbid change of structure in the eye-ball of a child, commonly called carcinoma, is not in reality produced by cancer, but by another species of malignant fungus, to which the epithet *hæmatodes* is applied—a disease, indeed, equally, and, with regard to the eye, more formidable and fatal, than cancer, but distinguished from it by peculiar characters, which not being confined to any part of the body, nor to age or sex, attack the eye-ball both of the infant and adult."

Before we proceed to consider more particularly the relation between *cancer* and *fungus hæmatodes* of the eye, it may be necessary to advert briefly to a few very remarkable points of distinction.

1st. The primary seat of *fungus hæmatodes* is for the most part in the retina, generally commencing at the point where the optic nerve enters the cavity of the eye.

2d. *Cancer*, if it commences in the eye, attacks the superficial portions of it in the first instance, gradually involving the more deeply seated parts, and as far as our present evidence extends, the surface of the conjunctiva and the lachrymal gland are the only textures belonging to the eye primarily affected with carcinoma.

3d. It is the opinion of Scarpa that *cancer* of the eye is much less destructive than *fungus hæmatodes*, because it commences

* Observations on Fungus Hæmatodes: Edinburgh, 1809.
† Translated by Briggs, 2d Edition, p. 502.

on the external portion of the organ; so that whatever relates to the formation and progress of the disease is open to observation.*

4th. The last distinction between what is called *cancer* and *fungus hæmatodes*, we shall notice, is the pulpy softness of every portion of the diseased mass in the last of these diseases—a character completely opposite to the firm unyielding *carcinomatous fungus*.

The word cancer (καρκίνος, literally *a crab*) has undergone several changes since its first introduction into medical language. The Romans applied it to the several conditions of gangrene and sphacelus, while the Greeks used the term *carcinoma* only to designate the disease known to us as *cancer*: at a later period, however, authors used it as a synonym of carcinoma, or carcinos (καρκίνωμα, καρκίνος.) It would extend this paper far beyond its prescribed limits were we to inquire the origin of this term; whether it was used in the first instance from a supposed resemblance to the body and claws of a crab, or from the idea that an animal devoured the affected part, or with the intention of conveying the notion of something particularly loathsome in the nature of the complaint. It is not improbable that all the above considerations influenced the selection of the name. It was, however, supposed to be a disease, confined only, (or in most cases) to the breast, and on turning to Paulus ab Æginâ † we have his description of cancer in the following words. "Cancer, a hard irregular tumor, sometimes with, and sometimes without an ulcer, which may arise in any part of the body, but most frequently attacks the breast." Early observers, remarking the very great difference between the ulcerated and non-ulcerated stages, considered it right to apply different terms to each: the name of *cancer* was therefore applied to the former state, and that of *scirrhus* to the latter. Again, the scirrhous stage was subdivided into two: viz. the simply scirrhous, and the occult cancerous, the commencement of pain being the barrier between them.

From the great resemblance of some features in the morbid mass, now recognised by the term encephaloid, to those of carcinoma, the name of *soft cancer* was very generally made use

* Scarpa is also of opinion that a cancerous fungus on its first appearance is not malignant, but that it becomes so in process of time.

† Lib. vi. chap. 45.

of to designate that disease. In 1812, Bayle recognising the fundamental similarity of hard and soft cancer (of encephaloid and scirrhus), without any wish of underrating the importance of their individual peculiarities, maintained the propriety of designating them by the same general name. "To our countryman Dr. Young" (remarks Dr. Walshe in his lucid article on cancer),* "belongs, in reality, the merit of having been the first to unite scirrhus *(carcinoma scirrhosum)* and encephaloid *(carcinoma spongiosum)* as species of a genius *cancer* or *carcinoma*." But his example has been very slowly followed. English writers, with the exception of Mr. Travers, more keenly perceptive of the differences, rather than of the analogies of these products, have almost to the present day continued to define cancer as ulcerated scirrhus, and to separate encephaloid completely therefrom, under the title of fungus hæmatodes. Nevertheless opinion had been silently undergoing a change among us; we had been gradually learning to recognise "the practical truth and importance of Dr. Young's nosological arrangement, when Dr. Carswell deprived us of all excuse for wavering, by satisfactorily proving its justness."

The researches of Laennec, Otto, Cruveilhier, and lastly, of Müller, have very clearly established the close relationship of another growth, originally described by Laennec as *colloid*, to scirrhus and encephaloid; to this tissue also, the generic term cancer has been proved, by Dr. Walshe, to be equally applicable.

He remarks, that "the union of these morbid structures into a distinct class is not a mere nosological artifice; it is manifest that the formations to which we propose to apply the generic term cancer, possess characters entitling them to be grouped together, and separated from all others to which the frame is exposed." They agree *anatomically*, for they are all composed of a containing and contained part, forming a combination without its counterpart in the natural structures. They agree *chymically* for they are all distinguished by the vast predominance of albumen in their composition. They agree *physiologically*, for they all possess in themselves the power of growth, and of extension by continuity of tissue; that is, of assimilating to their proper substance the most heterogeneous materials—an inherent tendency to destruction, and the power of local reproduction. They agree *pathologically*, for

* Cyclopædia of Practical Surgery, p. 591.

they all tend to affect simultaneously, or consecutively, various organs of the body, and produce that depraved state of the constitution known as the cancerous cachexia. "Their title," continues this writer, "to be united is quite as strong, in respect of practical medicine and surgery, as in respect of scientific pathology, a consideration of the very highest importance. As respects the name to be given to the genus, *cancer* or *carcinoma*, is clearly the best: to limit these terms to one particular tissue, when others possess the very properties on account of which they were originally employed, is a palpable contradiction."

GENUS, CANCER OR CARCINOMA.

FAMILY.	CLASS.	ORDER.	SPECIES.	VARIETIES.	SYNONYMS OF THE SPECIES.
Adventitious formations	Heterologous formations.	Tissues	Encephaloid	Common vascular sarcoma. *Abernethy* Mammary sarcoma. *Abernethy*	Spongy, or ossiverous tumour. *Palletta, Ruysch.* Struma fungosa [testis] *Callisen.* Spongoid inflammation. *Burns.* Milt-like tumour. *Munro.* Medullary sarcoma. *Abernethy.* Cerebriform disease, or cancer. *Laennec.* Pulpy testicle. *Baillie.* Carcinus spongiosus. *Good.* Carcinoma spongiosum. *Young.* Fungoid disease. *A. Cooper, Hodgkin.* Medullary fungus. *Maunoir. Chelius.* Acute fungous tumor. *C. Bell.* Medullary cancer. *Travers.* Cephaloma. *Hooper, Carswell.* Carcinoma medullare. *Mueller.* Soft cancer. *Auct. Var.*
				Solanoid. *Recamier, Zang* Nephroid. *Idem* Napiform. *Idem* Carcinoma fasciculatum vel hyalinum. *Mueller* Fungus hæmatodes. *Hey* Hæmatode cancer. *Auct. Gall.*	
			Scirrhus	Pancreatic Sarcoma. *Abernethy* Napiform. *Recamier* Chondroid. *Recamier* Lardaceous tissue. *Auct. Gall.* Carcinoma reticulare. *Mueller*	Carcinomatous sarcoma. *Abernethy.* Carcinoma scirrhosum. *Young.* Scirrhous cancer. *Travers.* Scirrhoma. *Carswell.* Carcinoma simplex vel fibrosum. *Mueller.* Stone Cancer. *Auct. Var.*
			Colloid	Pultaceous cancer. *Cruveilhier.* Pearly alveolar cancer. *Cruveilhier.*	Areolar gelatiniform cancer. *Cruveilhier.* Carcinoma alveolare. *Mueller.* Gum cancer. *Hodgkin.*

The annexed table well illustrates the varieties of cancer, from which it will be seen, that Dr. Walshe considers cancer is synonymous with adventitious heterologous tissue. I may here remark, that the fact of its being a tissue—in other words, that it possesses a peculiar structure—unequivocally separates it, as a morbid product, from others belonging to the same class; for example, *tubercle* and *pus*. The heterologous material of all carcinomatous formation is organizable, capable of vascular development, and therefore undergoes all those changes of increase and decay consequent on such susceptibility.

From a table now before me the mean age of 1200 cancerous subjects at death was 59·1 years in the male sex, and 56·1 in the female.

It is, however, an undoubted fact that the different species of cancer are far from being common to all ages. Thus, scirrhus is the form that attacks the adult, while encephaloid is the form usually assumed by the morbid growth in young subjects: the colloid appears only to have been noticed in adult individuals.

The different species of this formidable disease evidently make their attack on the human frame at different periods of life, no age, however, is free from it; the babe unborn, and the old man of three-score years and ten, may alike become its victims. Billard * mentions a case in which scirrhus had taken place in the heart during inter-uterine life. Dr. Walshe has recorded two instances of meningeal encephaloid which existed at birth. Mr. Travers has figured a very remarkable case of encephaloid disease of the eye, observed by himself and Sir Astley Cooper. At birth, the eye-ball was about the size of a large walnut.

M. Cruveilhier has, on the other hand, mentioned a case in which uterine cancer commenced at the very advanced age of 84.

I may remark also, that the three varieties of carcinoma, viz. the encephaloid, scirrhus, and colloid, have some points of distinction, by which each may be easily known, viz. colour, shape, size, microscopical constituents, supply of vessels, situation, and the age at which the patient is attacked by them. To examine these separately would take much time and space; we must therefore hasten, lastly, very briefly to describe a case in which the eye was successfully extirpated in a boy of nine years old. But

* Traite des Maladies des Enfans.

first it may be added, that Mr. Tyrrell observes, "that he is compelled, at present, to place together that which is usually considered as a scrofulous affection of the retina, and that which proceeds to the full development of true fungus hæmatodes, from inability to point out any signs by which the two diseases can be distinguished in the early stages; and also from the conviction that the two are sometimes similar in origin, and that that which is at first simple may subsequently become malignant."

VII.—CASE OF WILLIAM BARTRUP, ÆT. 9.

April, 1811.—The mother brought this boy, then about seven years of age, to my house, for an affection of the eye, which had been coming on for some years. The boy presented a very remarkable appearance. The eye-lashes of the left eye were gone, and the lower lid partially everted; the globe of the eye was much increased in size, and the vitreous body turbid, and of a dirty brown colour. On a more minute examination, the pupil was found dilated; the iris dull, discoloured, and pushed forwards, and the chambers for the aqueous fluid in part destroyed. The vessels of the conjunctiva and sclerotica contained red blood: and during the occurrence of the changes above mentioned considerable inflammation must have existed. There was also profuse lachrymation, some pain, and a great disinclination to turn the eye towards the light. The globe was tender and tense to the feel, and severe ocular and circum-orbitar pains were complained of. The palpebræ were tumid, and very red, and the superficial veins much enlarged, and fully distended with blood of a dark colour.

The mother told me, that some months before she had remarked that the pupil appeared to have "a yellow cast (appearance), but the lad did not suffer any pain at first." I learnt, also, that this yellow tinge soon increased, at first very slowly, then more quickly, "and the eye began to be blood-shot." The child appeared uneasy; a chymist was consulted, and some powders given, and leeches applied to the affected organ. "But they did no good," and, continued the mother, "the more he took the worse he became; so we gave up doctoring till he got so bad we were obliged to bring him to you."

The poor little fellow was much depressed, had a distressed look, and seemed to suffer a good deal of local pain: the cornea was clouded, and only a confused mass could be seen beneath, all distinction of lens or iris being in a great measure destroyed.

"Monstr' horrend', inform', ingens, cui lumen ademptum."—VIRG.

The secretions generally were imperfectly rendered, and the abdomen a good deal enlarged: a dose of calomel and rhubarb was therefore ordered at bed-time, and some of the compound decoction of aloes in cinnamon water the following morning. This was repeated two or three times with advantage. In a week the child appeared better, and much of the irritation already mentioned was removed. A mild mercurial plan of treatment was now commenced, and steadily followed for more than six months, during which period every possible attention was paid to the diet of the child. The form in which the mercury was given, was the Hydr. c. cretâ, with the Pulv. Cinnam. Co., so as gently to keep the little patient under its influence, the dose being diminished or increased according to circumstances. After taking this medicine for about four months some slight improvement was evident, and at the end of six months the deceased mass gradually began to subside. During this treatment the boy had improved in his general health, was quite robust; and much increased in stature and in bulk.

I now lost sight of my patient, and saw no more of him for twelve months, when he was again brought to me, the disease having made considerable advances. The child had, meantime being under the care of a Quack, y'clept a *water doctor*.

I saw this poor little fellow now and then up to the month of October in the last year, at which time the mercury which hitherto had possessed the power of arresting the disease, appeared quite inert. The eye-ball increased daily in size. The boy complained of no pain; and it would appear that the suffering is greatest whilst the deceased growth is confined by the unyielding and firm sclerotic tunic, if we may form an opinion from the relief obtained when this portion of the eye gives way.

The removal of the organ now appeared the only chance of affording relief, or rather of saving the poor boy's life; although at the time, I feared that this would afford but little hope.

I was well aware that the result of the removal of the diseased

organ had been very unsatisfactory, but still I thought, in this case, I was bound to propose it to his parents; and, with their consent, the eye-ball was removed in the usual manner.

It is needless to describe the steps of the operation: I had the valuable assistance of my friend Mr. George Chapman. The diseased mass was removed with a plain straight knife, some little difficulty being experienced from the very great softness of the globe. Various instruments are spoken of as required; curved knives and scissors, hooks, blunt and sharp, &c. &c. &c.; but I have long been of opinion that the more we simplify our operations, and the less we torture the patient with dressing, the better. The boy, in this case, got well over the operation, and is now quite recovered. The other eye is much improved, and the mother told me, a few days ago, that he was "in the best of health."

We have the valuable authority of Mr. Tyrrell for stating, that in many cases, in children, the disease has subsided, and the globe become atrophied, under steady and long-continued mercurial treatment. It therefore behoves us to endeavour, by every means in our power, to produce this effect, by the plan already pointed out, before we propose an operation which, I am fully satisfied, in the great majority of cases, will fail after a long-continued course of mercury has been tried without success.

CATARACT.

I shall only offer a very few remarks on cataract in this place, because I hope at no very distant period to devote a greater space than the limits of the present volume will permit, to its consideration. The disease may be divided into capsular and lenticular; as regards the latter, numerous subdivisions have been adopted, and we therefore read, of *milky*, *purulent*, *flocculent*, *amber*, *black*, *radiated*, *&c.* according to the aspect the cataract presents. A second division is suggested by its consistence, and consequently the cataract may be hard, soft, or fluid; traumatic when occurring after a wound, and idiopathic when arising without any obvious cause.

The opacity of the lens may be either imperfect or partial "as not extending through the entire substance, or it may be perfect

and complete, as when it affects the entire lens.* Capsular cataract is simply divided into anterior, or posterior, as the opacity affects both the anterior and posterior portions of the membrane which surrounds the lens. This form of cataract like the one already described, may either be complete or partial, and the morbid change exhibit every possible degree. As regards capsular cataract, Mr. Tyrrell is of opinion that there is little utility in any division, further than as regards the origin or cause of the disease, which materially influences the prognosis, and requires a modification in treatment, by operation.

The term cataract *(cataracta)* has been derived from the greek *καταρράσσω*, to destroy, abolish, or disturb, and was first used by the Arabians; the disease was called *suffusio oculi*, *gutta obscura*, *gutta opaca*, *cataracta*, *&c.*, by the earlier Latins. The state of the disease was not properly understood before the commencement of the eighteenth century, when it was made known to the profession by Antoine Maitre Jeane (1707). As I do not profess in this place to enter into a minute examination of the subject, I shall confine the few observations I have to offer to a consideration of the causes, complications, diagnosis, and treatment of the disease.

I. CAUSES OF CATARACT.

Cataract may arise from injury to the crystalline lens and capsule, and is sometimes congenital, but the most common form of it, is that which takes place spontaneously. In this form of the disease, we have seldom proof, either of inflammation of the eye or of an undue determination of blood to the part, although in some cases, signs of both local and general plethora are present, during the progress of the disease, but I am inclined to think that the cataract is quite independent of this state of system, although I readily grant that the disease may be increased by inflammatory action, and in some degree restrained, at least for a time, by attention to diet, by bleeding, and the use of purgatives. When cataract occurs under these circumstances, the combination is probably accidental: Mr. Lawrence remarks, that, "in many cases of ca-

* Tyrrell, Vol. II., p. 351.

taract the direct cause of that particular change in the lens is unknown, neither do we know that any particular state of constitution is favourable to its development."* Among the predisposing causes of cataract, we may enumerate *old age*, the lens becoming of a yellow colour; the cataract may also be *hereditary*, descending from father to son, and affecting many members of one family at the same period of life. By exposure of the eyes to a strong heat, the disease is sometimes produced, evidenced by the undoubted fact that glass-blowers, cooks, engineers, and blacksmiths are very liable to it. Great exertion of the eyes by candle, or gas light is supposed by Dr. A. Watson to predispose to the disease.

II. COMPLICATIONS.

Cataract may be complicated with opacity, or disease of the other transparent parts of the eye, with affections of the iris and retina, and also with diseases of the other coats and appendages of the eye. The most unfavourable state of things that can possibly happen is the existence of glaucoma, or amaurosis [glaucoma is in fact a kind of amaurosis]. When the cataract is green, and the pupil irregular and sluggish, or altogether immovable, if the patient cannot distinguish between day and night, or if so, in the most imperfect manner;—when these symptoms cannot be explained by the much increased size, or complete opacity of the lens and its capsule, the presence of amaurosis may be considered almost certain. This opinion will be strengthened, if previous symptoms of amaurosis have been present, such as deep-seated pain in the eye and head, together with seeing bright or dark specks before the eye; or if the organ has at any time been attacked with inflammation, and is increased or lessened in size, hard or soft to the touch, in consequence. It is highly necessary to become acquainted with the different degrees of cataract, which do not prevent patients from seeing to read, for in obscure and complicated cases, when the pupil appears to be natural, the diagnosis may often be formed by the smallness of the cataract present, not being sufficient to account for the imperfect vision of the patient. Again, a very small cataract may be present requiring particular treatment, as in the following cases of partial cataract.

* Page 111

CASE VIII.

A medical gentleman now no more, consulted me for what he supposed was amaurosis of both eyes; he had been to several medical men who all told him that the affection was seated in the nerve or retina, and with the most gloomy anticipations looked forward to a no distant period when he supposed he should become blind and for ever; he had little perception of minute objects, and could hardly guide himself in broad day-light out of doors; his manner of entering a room was very singular; the head was bent forwards, and the face continually turned from side to side; his age was thirty; after a little conversation he told me that he had no useful vision in a bright light, and that he could only see small objects in a moderate degree of light; he constantly shaded his eyes with his hand, and wore a hat the brims of which were very broad. I had never seen a case like this before and could make nothing of it; he had been bled and blistered, &c. &c., taken calomel and strychnia, used the shower bath and sea-bathing all to no purpose. I was inclined to think that this was a case of amaurosis, but before I gave an opinion, wished the opportunity of examining the eye more minutely. I therefore requested him to call the next day and allow me to examine the eye again before I decided on the nature of the affection. Accordingly when he called the next day, I immediately applied a strong solution of the extract of belladonna to both eyes, drawing the curtains of the room, at the same time requesting him to keep both eyes closed. In half an hour I opened the curtains and to his astonishment as well as my own he could see very well: my friend went down stairs, looked into the street, could see every thing that was going on, and then returned to me. I was very anxious to examine the eyes, which his excitement and joy had hitherto prevented my doing, and in a moment the cause of this sudden restoration to sight was evident, each eye contained a small central cataract *(lenticular)*. He continued to use belladonna two or three times a day until his death and enjoyed excellent vision. I had not seen an account of this form of the disease at the moment, or if I had, the impression that it made was so slight that it was altogether effaced; since then, however, I have read the cases recorded by Mr. Tyrrell, one of a lady, æt. 29, who had always had

very imperfect vision, she was treated with a solution of the extract of belladonna, and continued to enjoy the use of both eyes for years afterwards; each lens presented a central opacity of a light-ish grey tint occupying about two-thirds of the extent of the body, the surrounding part being perfectly clear and transparent. This gentleman also relates several other cases of a similar kind; one, in which the extract of belladonna had been used by a barrister, five or six times a day, for more than eighteen years, the motions of the iris continuing as rapid and quite as perfect, as if the belladonna had never been applied. In all such cases this plan of treatment is the one we ought to make use of, because they are very unfavourable for operation, and found to be particularly so at the London Opthalmic Hospital, inflammation being much more frequent after operation in these cases, than in the ordinary forms of cataract. It ought, however, to be added that the instances (at any rate the great majority of them) in which an operation has been productive of the most injurious effects, have occurred in patients above the age of puberty, whereas in children little mischief has resulted "under my own observation."* If the operation is decided on, it is better to attack only one eye at a time, the preparation of the patient must for some weeks before, enlist the surgeon's most attentive consideration, the state of the weather must not be overlooked, and a favourable day chosen; the operation will also require the utmost care and delicacy in its performance. For my own part I should always be content to use the belladonna so long as it continued to produce the desired effect.

CASE IX.

The mother of a boy, æt. 11, brought him to me for great defect of vision. From the manner in which he entered my room I was convinced that he was suffering from cataract. I at once said to her, how long has your son had cataract? she replied "the doctors say it is not cataract, but the worst kind of blindness." Some solution of belladonna was put into both eyes, and a small cataract at once detected in the centre of each, the halo surrounding which was perfectly clear and transparent. The boy, much to his

* Tyrrell, p. 381.

delight, could see before he left the room, and by the daily use of the belladonna, was enabled to read his lessons at school, which he had never done before without the greatest difficulty.

It is in cases like these, where the cataract is entirely lenticular and the pupil very small that the disease is mistaken for the first stage of amaurosis; they point out the absolute necessity of dilating the eye with belladonna in all cases of suspected cataract before a decided opinion is pronounced.

The solution of belladonna is frequently very improperly prepared, the way in which I am in the constant habit of recommending it, is this: a scruple of the extract should be mixed with an ounce of distilled water, well rubbed in a mortar, and afterwards carefully filtered through blotting paper.

III. DIAGNOSIS.

I have already said that glaucoma and amaurosis are sometimes mistaken for cataract, and that the latter disease may be combined with either of them: it is therefore highly important if such combination exist, that it should be detected in as much as it would materially influence our prognosis and treatment. The student will do well at once to make himself thoroughly acquainted with the situation of the opacity, and also with its colour, with the state of vision, and the condition of the pupil.

1. *Situation of the Opacity.*—In lenticular cataract the opacity is placed just behind the pupil and commences in the centre of the lens; glaucoma is more deeply seated, and is situated quite at the back part of the eye.

2d. *Colour of the Opacity.*—In cataract the colour of the opacity is white, or white with a bluish shade, (something like skimmed milk) amber and grey, but in glaucoma it has generally a dull green, or dirty yellow appearance.

3d. *State of Vision.*—In cataract the loss of sight will be in proportion to the degree and extent of opacity present, in glaucoma the dimness of vision will bear no exact correspondence with the visible amount of dulness or opacity; the sight may be quite gone, and the pupil only slightly dull and cloudy, and the patient can see best during bright sunshine.

4th. *State of the Eye-ball.*—In cataract the globe will be perfectly natural in form and size, but in acute glaucoma it is tense, and frequently very hard; and this doubtless is an important distinction between the two. Glaucoma is often accompanied by pain, cataract does not give rise to the slightest suffering.

5th. *State of the Pupil.*—The motions of the pupil are nearly as perfect as usual, at the commencement of cataract; it will expand in the absence of light, and contract on its admission; but the motions of the pupil are almost altogether destroyed in patients suffering from glaucoma. When the cataract is in combination with amaurosis, the history of the patient will generally enable us to ascertain the true state of things; and if this is wanting, we must then in a great measure rely on the patient's incapacity to distinguish the degree of light, always perceived, or at any rate in ninety-nine cases out of every hundred, when the cataract alone is present; on the mobility or otherwise of the pupil, and on any other general and local symptoms that may be present. Dr. Turner, whose work on surgery was published more than one hundred years ago, quotes this passage from the writings of the justly celebrated Piteairn.—"Hence it follows that if the beginning of a cataract is accompanied with the representation of visages floating about (muscæ volitantes?) then there is also in the eye a gutta serena; and in such a case although the cataract be removed by a surgeon, yet an incurable blindness will ensue, which often happens, and seems to have been the case of the patient of Timæus (in p. 55, book 1,) when the honest man took that for a simple suffusion (*cataract*) which was also a gutta (amaurosis)." Dupuytren and Travers have both known cases where a transparent lens has been extracted, in a case of amaurosis, under an impression that the dimness of sight was occasioned solely by the presence of a black cataract.

Dr. Watson remarks, "in cases of amaurosis there is a peculiar expression of the eyes, easily recognised by an experienced observer. This consists in the patient having a vacant unmeaning stare, without directing his eyes to any particular object; and he does not readily direct his eyes to objects even when they are presented to him. In cases of cataract however, these circumstances do not occur."

Catoptrical exploration of the state of the lens as regards its transparency.—The merit of discovering this method of examining the eye belongs to Professor Perkinje, of Breslau, but has come into more general use since the publication of the clinical remarks of M. Sanson. Mackenzie remarks that:—

"The young practitioner ought never to pronounce absolutely even on the existence of cataract without dilating the pupil by *belladonna*, and examining the eye *catoptrically*; and the most experienced may derive advantage from exposing in this way the whole field of the disease to his view, and testing the state of the crystalline." *

"If a lighted candle be held before the pupil of a sound eye, three reflected images of it are seen situated one behind the other. Of these the anterior and posterior are erect, the middle one inverted. The anterior is the brightest and most distinct, the posterior the least so. The middle one is the smallest.

"If the candle be moved, the two erect images follow it; but the inverted image moves in the opposite direction, though not so quickly and extensively as the other two.

"The anterior erect image is produced by the cornea; the posterior, by the anterior surface of the lens; and the middle or inverted image is from the posterior surface.

"If the whole crystalline body be opaque, no image but the anterior erect one from the cornea is seen. This is of course the case also if the anterior part alone be opaque; but if it is the centre or the posterior part only which is opaque, the two erect images are seen, but the middle or inverted one is not."

To apply this catoptrical method to assist the diagnosis of cataract, when the ordinary mode of examination may not have cleared away all doubt, the observer and the patient should be placed in moderate day-light; the patient's back is to be turned towards the window; he should be seated, so that the observer may look rather down into the eye than upwards; and a candle is to be used which burns steadily, and does not blaze much.†

"Cataract, even at an early stage, obliterates the inverted image, and renders the deep erect one very indistinct. Glaucoma, only when much advanced, obliterates the inverted image, while, in all its stages, it renders the deep erect one more evident than it is in the healthy eye."

Dr. Mackenzie has found that in glaucoma, at a middle stage, the inverted image is pretty distinct, when formed near the edge of the crystalline; but if the candle be brought in front of the eye, the inverted image is less distinct, and in some cases is altogether extinguished. This extinction of the inverted image is owing to

* Mackenzie, p. 650. † Dr. Watson.

a loss of transparency in the kernel of the lens which, in glaucoma, Dr. M. has found suffers a peculiar degeneration, characterized by dryness of substance, and a reddish brown colour.

In incipient lenticular cataract the inverted image, though changed neither in colour nor in size, is indistinct, and its outline as if washed off. It is extinguished long before the cataract is fully developed—a fact of the greatest importance, Dr. M. remarks, in the diagnosis betwixt glaucoma and cataract, because in lenticular cataract, it is not the kernel of the lens, but the superficial laminæ, which are first affected, so that the formation of the inverted image by any part of the posterior surface of the crystalline body is prevented. *

"In capsulo-lenticular cataract, the inverted image fades much sooner than in mere lenticular cataract; and even when the capsule, or the superficial substance of the lens, seems alone to be opaque, the inverted image disappears much sooner than we should expect from the apparently small degree of opacity.

"In lenticular cataract, there is merely a general reflection, but no distinct image, from the anterior surface of the crystalline body.

"If the lens is not in its place, but has been absorbed in consequence of an injury, been removed by an operation, or fallen down into a dissolved vitreous humour, neither inverted nor deep erect image is formed.

"In the diagnosis of incipient cataract and incipient amaurosis, the catoptrical test is perfectly decisive; for in amaurosis, uncombined with glaucoma, the three images are always distinct, while in even the early stage of cataract, the inverted image is obscure. The diagnosis of incipient cataract and incipient glaucoma requires the catoptrical test to be familiar to the observer, else he may not be able to distinguish, that when the candle is held in the axis of the eye, the inverted image is indistinct in both diseases, but whenever it is moved to one side, it becomes distinct in glaucoma, and remains obscure in cataract."†

IV. TREATMENT OF CATARACT.

The only way of treating cataract is by the removal of the opaque body, various plans of treatment have been adopted but without success and it may be laid down as an admitted fact that cataract is quite incurable by any outward application or internal remedy. Cataract causes blindness by intercepting and preventing the passage of light to the retina, the other parts of the eye

* Dr. A. Watson.
† Mackenzie, p. 640.

being entire; all operations for cataract are therefore performed for the purpose of removing the opaque body whether consisting of capsule or lens. There are three ways of removing cataracts from the axis of vision. 1st—They must be depressed or removed into the vitreous humour *(couching)*. 2d—The cataract may be broken up and left to be dissolved in the aqueous humour, this is termed the *operation by solution*. 3d—Cataracts may be entirely removed from the eye by the operation of extraction. There are many ways of performing each kind of operation, and each may, when properly performed effect a cure, but each is not equally suited to all cases and a judicious operator will not say with some, I operate by extraction only, with another by couching, and with a third by solution, but will adopt that operation which appears best suited to the particular circumstances of each case. In a work published by Mr. Guthrie, he says, "the operation of extraction ought only to be performed in cases of hard cataract, which are easily distinguished from all others." It is, however, rather difficult to distinguish between hard and soft cataract in all cases, and Mr. Wardrop remarks, "there are scarcely any diagnostic marks of hard and soft cataract which can be altogether depended on." The soft cataract may, however, generally be distinguished by the large size of the opaque body, its near approach towards the plane of the iris, or edge of the pupil, its white colour, and from having points, streaks, or inequalities, which vary their appearances at different times. The blindness, too, by which soft cataract is accompanied is always considerable; for when the whole lens is opaque the patient can derive no benefit from the great dilation of the pupil which is produced by shading the eyes, or by the influence of belladonna, and can seldom see more than differences in the intensity of light. When the cataract is hard, the opaque body is neither so large nor so close to the edge of the pupil as when it is soft, so that a sufficient number of rays of light can enter, and the patient is still capable of distinguishing some objects from the side of the eye. The hard cataract has the same shade of colour throughout the whole lens, and its natural smooth surface may be remarked, the motions of the pupil are extremely lively, and it seldom remains much enlarged. The opacity behind the pupil is, at the commencement of the disease, observed in the middle and then extends very slowly towards the circum-

ference of the lens. The colour of the hard cataract is usually grey, passing more or less to a bluish hue. It has generally been remarked, that the fluid, or milky cataract is the most frequent form of the disease in children, and that the solid or concrete cataract is most common in the adult. Soft cataracts, are however, by no means unusually met with in those advanced in life.* Scarpa and Pott say we cannot determine this matter with certainty, and Mr. Middlemore "that he is quite confident that the question cannot always be determined correctly—we cannot decide it with invariable precision prior to the performance of an operation."† In very early life, the lenticular cataract is always soft unless complicated with osseous or cretaceous deposition. Before adult age Mr. Lawrence has not seen one case of hard cataract.

Manner in which the operation ought to be performed.—I have for a considerable time, says Scarpa, "laid aside the method of treating the cataract by extraction, and have entirely applied myself to the practice of depression, and I see continually great reason to be satisfied with the choice which I have made."‡ I at once admit that the operations of solution and couching, are preferable to extraction in the cases to which they are adapted, but at the same time am not prepared to lay the latter operation on the shelf even at the command of the celebrated Scarpa, and agree with the writer in the first volume of the Quarterly Journal of Foreign Medicine and Surgery, who, after copying an observation from Beer, to the effect that many surgeons were in the habit of employing the same operation for the cure of all the varieties of cataract, and in whatever subject it might exist; the soft cataract of children being often subjected to precisely the same method of treatment as the hard cataract occurring in persons in advanced life, continues—"as professor Beer is no charlatan, and has no trifling invention of his own to announce, he recommends the cure of cataract to be attempted, according to the circumstances of the case, by depression, extraction, or division, and expresses himself with much warmth against those ignorant and unprincipled men who would persuade the public that they had improved any

* Vide Beer, Wardrop, and Guthrie.
† Middlemore, p. 94, vol. II.
‡ Scarpa "on the principal diseases of the eye."

one of those operations, so as to operate safely and successfully in all cases of cataract, by one method exclusively. *The depression of a large cataract, the extraction of a soft one, the division of a hard one*, are three surgical solecisms."

The late Sir A. P. Cooper remarks, and a voice speaks with the authority of one, who though dead will never be forgotten, and whose practical hints and cautions will be valued so long as surgery shall be cultivated as a science, "that it is extremely important that the different species of cataract should be known, as the operation necessary to perform depends on the kind of cataract that exists."* The above quotations are in themselves sufficient to prove the folly of attempting to cure every kind of cataract by the same operation; and without entering further into the controversy shall in the next place endeavour to answer a few preliminary questions before we proceed to the examination of each kind of operation, and the cases to which each is applicable.

1*st. Where only one eye is affected with cataract ought we to advise an operation?*—I think most decidedly not, because the inconvenience is not great, and in my opinion the advantages not sufficiently evident to compel its performance. Besides, if the lens are only removed from one eye the focus of vision is altered, and the remedy creates a worse state of things than the disease. There are, however, some exceptions to this rule which will hereafter be mentioned. Mr. Guthrie declares he has met with some cases in which great inconvenience was sustained from the confusion of vision caused by a successful operation, and on one occasion the patient actually wished him to destroy the sight gained by the operation. He thinks therefore that the operation ought not to be performed in one eye while the other remains sound.† Mr. Lawrence considers the practice a bad one, and Dr. Mackenzie that if "it were established that cataract might be produced sympathetically, there could be no doubt of the propriety of removing a single cataract, even when not the slightest appearance of the disease could be detected in the opposite eye, *but the fact is not established*. The cataract of old people generally attacks both eyes within the period of a few months; but, in middle life, we often meet with it in one eye, the other having

* Lectures on Surgery, p. 268.
† Operative Surgery, p. 258.

continued unaffected for many years." * Mr. Midddlemore proves that there is no evidence inducing us to conclude that when one eye is affected with cataract, the other becomes impaired or amaurotic. "Persons" says he, "who were born with one eye, persons who, in early life, have had collapse of the eye-ball after an attack of opthalmia; persons who are affected with congenital or traumatic amaurosis, or cataract of one eye only, very often retain the sight of the opposite organ to a late period of life." † This author seems to regard an operation for a single cataract as only right on young females, to whom personal charms is an argument of some weight. Except in very young persons where the cataract can be very easily removed, and in females, to remove deformity, it is not right to perform an operation when only one eye is affected; in elderly persons the case is altogether different, and the rule is therefore a good one, with some exceptions, viz. *not to operate on one eye, until the patient is deprived of useful vision with both.*

2d. *When should the operation be resorted to?*—The rule here admits of no exception, the established plan being not to perform the operation until all useful vision is destroyed. In the hands of the most dexterous surgeon the operation sometimes fails, and as by an unsuccessful operation the patient may be deprived of sight; and as any, even the smallest degree of vision is better than total darkness, the patient ought not to undergo the the operation while the eye is at all useful, and more especially if the other eye is irrecoverably blind. Again, when quite blind, before the operation is performed, even though it fail, he will not be in a worse condition than before; and as the actual pain produced by the operation is not great, cannot lament having made an attempt to procure the restoration of his sight: if, however, the operation is performed too early and should unfortunately prove unsuccessful, the murmurs of the patient may deter others from soliciting relief, who find him in a worse condition than before.

3d. *If both eyes are affected with cataract ought the operation to be performed on both at the same time?*—On this question great difference of opinion exists. Some operate on both eyes at the same time, whatever may be the kind of operation selected,

* On Diseases of the Eye, 2nd ed. p. 700.
† Ditto, vol. II, p. 114.

and others, more prudently, on one only. A good deal has been written on this subject; the principal reason for operating on both at the same time, appears the saving of time and trouble to the patient, and preventing the necessity of further weakening the constitution, by a second application to the necessary antiphlogistic treatment. It appears to me that a middle course is the best, and that while it is exposing a patient to an unnecessary degree of risk to perform the operation of extraction on both eyes at the same time, the objection does not so forcibly apply to the use of the needle, although there may be, and often are cases, in which even then it will be better to perform the operation on one eye only at a time. If, for example, a surgeon were to operate upon both eyes at the same time in a patient of an inflammatory diathesis, or on one subject to gout or rheumatism, which fact not having been known previously, is discovered when too late for saving even one eye; but if performed on only one eye at a time, should untoward circumstances arise, from which the operation proves unsuccessful, one eye yet remains, and such measures may be taken as will prevent an attack of inflammation when operating on the second. The suggestion of Mr. Middlemore, viz. placing an issue in the arm of those with a gouty diathesis is certainly an important one, and if I operate under such circumstances shall most certainly adopt it.

It is the practice of several opthalmic surgeons to delay operative measures until the patients have lost all useful vision with both eyes, and then to extract both cataracts at the same time. I know of no good and sound reason for such practice, but on the contrary find several strong arguments against it.*

If the eye be occasionally lost in consequence of inflammation, produced by the operation, or by some subsequent injury, or accidental circumstance, when one eye only has been subjected to operation, it will, doubtless, happen when the double operation is performed; and in my opinion, the risk of such untoward result is more than doubled, when both eyes are subjected to operation at the same time.†

4th. *At what season of the year ought we to perform the operation?*—This is of very little importance, but the state of the

* Tyrrell. Vol I, page 120.
† Ibid. page 121.

weather must be particularly attended to. When cold the patient is apt to sit very near the fire, and in this way the eye is often injured. The operation is doubtless most hazardous during cold and damp weather; Mr. Tyrrell says he now operates for extraction from October to March; and that the proportion of unsuccessful cases has been very much lessened since he has discontinued to operate in the damp and cold periods of the year. Dupuytren paid great attention to the state of the weather, when about to operate for cataract, and his opinions must ever command our respect.* "It is necessary to avoid hot weather because patients are generally obliged to keep in bed afterwards."† Bannister thought the matter of great importance, and has given us the benefit of his opinion in poetry, his favorite mode of treating what he considered of consequence.‡

5th. *In congenital cataract, at what age ought the operation to be performed?*—It was the opinion of the late Mr. Saunders of London, that the most favourable time for operating is from eighteen months to four years of age. Mr. Tyrrell thinks the operation should not be delayed beyond the third month. It is a well-known fact that the eyes of children thus affected acquire a rolling or tremulous motion, which is prevented by an early operation. The safety and efficacy of Mr. Saunder's plan of operation are now so satisfactorily established, that I see no good reason for waiting for the occurrence of the involuntary action, and should consider the surgeon to be highly culpable, who permitted a delay in the operation, when the child begins to roll the eye-balls in an unusual manner."§

6th. *What are the particular cases best adapted to the different operations for cataract?* 1st—*Extraction.* This is without doubt, one of the most beautiful and complete operations in surgery, but still not applicable to all cases. I may also add that there are two principal objections to it. 1st—the greater danger

* Lecons Orales.

† Ware's Translation of Wenzel.

‡ This may serve as a specimen :—

"Couch cataracts upon a day so faire,
That neither wind nor clouds disturbe the ayre;
When spring with smiles fills the earth's rich lap,
Or autumn makes the tree put off his cap:
The moon i'the full, or in conjunction sly,
Or tracing Aries, or in Gemini,"

§ Tyrrell, p. 74.

to the eye in this than in any other operation. 2d—the much greater difficulty of performing it. "Extraction" says Mr. Liston, "in favourable circumstances, and in dexterous hands, is a beautiful operation, and most satisfactory, but ought not to be undertaken unless the surgeon has perfect confidence in himself."* The operation of extraction is particularly applicable to firm cataract, especially in persons advanced in years,† when no particular contra indications exist we have recourse to extraction.‡ M. Roux almost invariably operates by extraction, and states, that four hundred out of six hundred and sixty-five operations performed by him, at the Hôtel Dieu, were successful.§ I have many times witnessed his manner of performing this operation, with delight, and am happy, not only to bear testimony to the successful termination of the majority of his cases, but also to have this opportunity of thanking him for his kind attention to myself, when last in Paris. What, then, are the circumstances rendering an operation by extraction improper? 1st—when the patient is very feeble. If the operation be performed in such a case, it is highly probable that the corneal flap will never unite. 2d—when the cornea is small in proportion to the eye-ball. 3d—when the eye-ball is placed very deeply in the orbit. 4th—an opaque state of the cornea. 5th—adhesions between the iris and cornea, or capsule of the lens. 6th—when the patient is very far advanced in life, or when very irritable. Under such circumstances it would be highly improper to attempt the operation of extraction, at the same time, when none of the above circumstances forbid the operation, I think the dangers attending it, belong, in part, to the surgeon. It is hardly necessary to add that no attempt must be made to extract a cataract, if any important disease of the globe or its appendages exist. In speaking of the different kinds of cataract, and their complications, it was observed that when the formation of the cataract has been attended with pain, or if of a green colour, the prognosis is unfavourable; I should certainly not operate in such a case by extraction; or when the globe is soft and flaccid: such a state of things indicates an altered condition of the vitreous fluid, and the eye would in all probability be lost.

* Elements of Surgery, p. 131.
† Lawrence, p. 429—130.
‡ Mackenzie, p. 721.
§ Royal Acad. Sci. Paris, 1818.

2d. *Depression.*—This operation like the last, is applicable to cases of hard cataract, and must be performed when the former operation would be improper, from the circumstances already mentioned, or when the anterior chamber is very small, the patient particularly feeble, or affected with chronic cough or asthma, &c.

3. *Solution.*—The removal of cataract by division and absorption is founded on the fact of the crystalline lens being removed from the eye in cases where its capsule has been laid open, by which the lens is subjected to the action of the aqueous humour. To accomplish this, it is necessary that the lens should be freely exposed to the influence of the aqueous humour, by its capsule being laid open. The process will be much accelerated by the lens being broken into fragments and part of them placed in the anterior chamber (a procedure not altogether without risk, in some cases,) the length of time necessary for the complete absorption of the cataract will depend upon its degree of hardness, the softer the lens the quicker the process. It takes place much more quickly in young persons. The intention of this plan at first, is simply to lacerate the anterior portion of the capsule without displacing the lens. When this is done, if the lens be very fluid or soft, it passes into the anterior chamber, rendering the aqueous humour turbid, but it is very soon dissolved. This operation causes so little injury to the eye, that it may be repeated once, or oftener, at intervals of two or three weeks, when inflammation follows the operation for solution and absorption of the lens, the curative process will be a little retarded, for absorption does not go on until the inflammation has quite subsided. What is called drilling a cataract is simply a modification of this operation. The operation for the solution of a cataract is divided. 1st, into the *anterior operation* KERATONIXIS as being performed through the cornea, and 2d, the *posterior operation* HYALONIXIS, because the instrument opens the hyaloid membrane. The second operation *(Hyalonixis)* is principally applicable to cases of congenital lenticular cataract, provided it is performed before the child is three years old. In performing this operation on an infant, care must be taken to have it secured in a proper manner, and for this purpose two or more assistants are required. The child should be encircled by a sheet, so as to confine the arms to the side; the head must also be secured and placed on a pillow in such a position as

to throw the light obliquely upon the child's face; the operator must be so seated that the child's head rests against his breast, the superior lid must be raised and fixed by the speculum.

"It is impossible," says Mr. Travers, "to conceive a more simple, sufficient, or gratifying operation than that of Mr. Saunders, if the intention is perfectly executed. I have now enjoyed extensive opportunities of ascertaining its value, having operated during a period of ten years upon children of all ages, from four months upwards, and I do not hesitate to affirm that it ranks in my estimation as one of the finest discoveries of modern science."* I cannot better conclude these very brief observations, respecting the kind of operation, suited for the three classes of cataract than by quoting the words of Mr. Guthrie, and the late Sir A. P. Cooper, "the *hard* admits only of extraction or displacement; the *soft* seldom of displacement or of extraction, but usually of division; the *capsular* neither of displacement, extraction, nor division, purely considered as such, but by laceration and removal of the opaque body from the axis of vision, by different operations, which although they may partake of the nature of all, are yet not precisely either; all intermediate states of disease, such for instance, as the caseous and fluid cataracts, admit of some slight deviations from these rules, but are still regulated by the same principles"† "No judicious surgeon will indiscriminately prefer one mode of operation to another, his opinion must be decided by the nature of each particular case. In general, where the nature of the cataract admits of it, the operation for solution is preferable. In cases where the operation for extraction is not contra-indicated, it will be preferable if the surgeon has had sufficient opportunities of acquiring dexterity, but if he has not been much in the habit of performing the operation, I should recommend as the safer, though less effectual course, the operation for depression."‡

6th. *When the Cataract has existed for many years ought we to perform an operation?*—It is a well known, and universally admitted fact, that all parts which are not exercised, lose more or less of power, and consequently the retina from not being

* Synopsis, p. 321.
† Operative Surgery of the Eye, p. 365.
‡ Sir A. P. Cooper's Lectures on Surgery, p. 284.

accustomed to receive the impressions of light, loses a considerable portion of its power. When the disease has existed for a great length of time, the operation must not be performed, without taking all the circumstances of the case into consideration; the form of the cataract, its colour, &c. &c. If the patient can discover day from night, it had better be performed, in doubtful cases, although persons may have not only cataract but also amaurosis and yet be able to distinguish day from night. Before performing this operation, when the result is uncertain, every honest man will fairly state the true nature of things to the patient and tell him that it is quite impossible to say exactly, how it will terminate, and that the case is not a very favourable one. At the same time it should be stated also, that an operation sometimes has succeeded, under very adverse circumstances, that it is not at all painful, and even in the event of its not succeeding, the eye will not be in a worse condition than before the operation. It would be very culpable to operate where it was quite apparent that no relief could be afforded; and yet, says Sir A. P. Cooper "I am sorry to say, that I have known individuals operate when there was no more chance of doing good than if the eye had been scooped out of the head—such men are unprincipled, and would undertake any thing for the purpose of gain"* The above remark is a very true one, and yet the triumph of such men is of very short duration, for the path of honour and of duty is the only one that can afford that peace of mind so necessary to the medical practitioner, the very crutch of support, amid all his trying duties—truly did one of old say—

Magna est veritas, et prevalebit.

Instances however may be adduced in which operations, for cataract, have succeeded when least expected; I am happy to have it in my power to record two very singular cases of this kind; the parties are both living at this moment, and have given me permission to publish their names. The value of every medical work consists, in a great measure, in the number of well authenticated facts it contains, and however useful the aid of organic chymistry, the use of the microscope, and the different theories of modern physiologists, something more is yet required, ere a man

* Lectures on Surgery, p. 271.

can be of use to society, and this *something** is only to be learnt at the bedside of the patient.

CASE X.—RESTORATION TO SIGHT AFTER BEING BLIND MORE THAN FOURTEEN YEARS.

E. Grice, the wife of a carter residing at Wiseton, consulted me for blindness. April 6th, 1840. She was this morning led into my room by her daughter, quite blind. I asked her how long she had been in darkness,—the reply of the poor woman was as follows: "It is many years, sir, since my eyes began to fail me—I cannot tell you how long they have been bad, but I have been stone blind more than fourteen years, and I'll tell you how I know it. It is fifteen years since my mother died, and I could not then see her face. I could only just shine it as she lay in her coffin; after that I soon got worse, and have been all these years in darkness." I asked her if she could tell day from night, and she said when the sun was very bright, she fancied she had a ray now and then. Her age was forty—the pupil of each eye contracted, and the eye-balls deep in the orbit. She had been to several medical men, who told her this was not a case for operation. On dilating the pupil with belladonna, a large cataract could easily be distinguished in each eye. There was also present, that peculiar tremulous quivering, and wavering motion of the iris (vacillation), which occurs sometimes after the operation for cataract, after a blow upon, or concussion of the eye-ball, and in connection with certain diseased conditions of the eye, and derangements of the system. This undulatory motion is said by Mr. Wardrop, to be like "a piece of cloth exposed to a fluctuating wind;"† Mr. Lawrence remarks, "when the natural support, which the iris receives from the parts behind, is lost, it shakes backwards and forwards like a rag in a bottle of water."‡ I am however inclined to think that this opinion is not quite correct: it cannot be said the affection arises from the loss of the lens, for it is not often present after the operation for extraction. It arises more probably from some nervous irritation or injury, either of the lenticular ganglion, or the ciliary nerves. The poor woman was a good deal out of health when first under

* See Preface. † p. 49. ‡ p. 394.

my care, the operation was therefore delayed for a few weeks, the system strengthened by alteratives, and full doses of the sulphate of quina. The operation was now performed with the needle, and both eyes couched at the same time. The patient was kept in a darkened room for a few days, and confined to bed; the eyes kept cool with water, and the bowels freely opened. In a week she could see her friends, and in three weeks was enabled to guide herself along the road; I have seen her this day (three years after the operation), and found her seated by the fire, reading the Bible, she told me, that with the assistance of glasses she could read the smallest print.

CASE XI.

Robert Cook, residing at Gringley-on-the-Hill, was brought to me, after having been blind more than four years. He could hardly distinguish light from darkness; an operation had been performed upon one eye two years before I saw him, and the eye completely lost. The operation (couching) was performed a day or two afterwards, and was followed by severe inflammation, to subdue which he was bled twice, a quantity of leeches applied, and treatment of a similar nature, and carried to the same extent, as in the subduction of inflammation, of the same degree, of similar parts, arising from any other cause. In six weeks he could see very well, and in ten weeks a pair of glasses were given him; I passed him on the road, a year after the operation, he was alone, and gathering manure for his garden. He said he could see as well as ever he did at any period of his life.

The last two cases, more particularly the former, prove that vision may sometimes be restored under very unfavourable circumstances. We are not, however, always so successful. I was induced to perform the operation at the earnest request of the friends of a young woman, who had been under the care of Mr. Morgan. He had operated on the right eye, an attack of inflammation followed, and the organ was destroyed; he wished to operate on the other eye, but the girl refused, and left London. When I saw her, she could not tell light from dark; from the history of the case, and the appearance of the eye, I was certain that the

cataract was complicated with amaurosis. The eye was couched at her earnest request, the cataract removed, but the pupil remained dull and dilated; and the poor girl is, and I fear ever will be, quite blind. It is, however, pleasing to feel that she is not now in a worse condition, than before the operation, and the appearance of the eye is much improved.

USE OF GLASSES AFTER THE OPERATION.

When am I to use glasses, sir? is one of the first questions asked after a successful operation for cataract. It is very necessary to caution the patient against using them too soon; the eye after a long period of inaction, must not all at once, commence hard work: it must be gradually accustomed to look at minute objects, and not exposed to a bright light. As a general rule, glasses must never be used, so long as any important degree of inflammation remains, nor for any length of time at first, nor of any great power, except now and then, when reading or writing. If fatigue or pain (aching of the eye-ball) succeed the use of glasses either they are not properly adapted, or employed for too long a period. Some patients are apt to use very powerful convex glasses, and tell you they can see most delightfully in them. Very true, but it is the duty of the surgeon at once to inform them, that their continued use will either altogether destroy, or much injure the power of vision. Many have regretted, when too late, the folly of such injudicious conduct. Mr. Morgan has just introduced to the notice of the profession a modification of the operation for depression of the cataract, recommended to him by Mr. Egerton, of the Eye Infirmary at Calcutta. The operation appears to have been very successful. A description of the operation may be found in the Med. Chi. Rev. No. 75. p. 269.

STRABISMUS.

A person is said to squint, if in looking at any particular object, one or both corneæ are turned either more outwards or inwards than they ought to be. Strabismus may arise from a great variety

of causes. If a small nævus or mark exists upon the nose, the eye of the child will be constantly directed towards it, and by making long and repeated efforts to direct—or rather twist the eye towards the object of attention, the relative power of the muscles is lost. The same result often follows the continued direction of the eye as the child lies in the cradle, towards some ornamental portion of the cap, and sometimes from mocking a play-fellow. 2d—if both eyes are not of the same strength, the retina of one, being much less sensible to the influence of light than the other, the weak eye generally squints. 3d—squinting arises from a variation in the power of the muscles; thus, in divergent strabismus, the external rectus of the affected eye will often be found increased in size, and much larger, relatively, than the other muscles of the same eye. 4th—Mr. Mackenzie says, that "strabismus may be induced by various forms of injury;" "I knew a case, in which squinting was caused by squirting the juice of fresh orange peel against the surface of the eye, which at the same time produced considerable pain." It is also a frequent symptom of amaurosis, and various diseases of the third pair of nerves will often be followed by divergent strabismus; convergent strabismus on the other hand often arises from diseases of the sixth pair. I have not as yet mentioned those cases of strabismus, which arise from irritation of the alimentary canal, or from dentition, as they must be known to every man making diseases of the eye his study. They are generally, of trifling extent, short duration, and very easily removed by lancing the gums, and a few doses of calomel and rhubarb.

TREATMENT.

This will depend on the cause of the disease; and here, I cannot refrain from entering my protest against that system so very prevalent a few months ago, of brandishing knives and hooks, blunt and sharp, of all shapes and sizes, and poking them into the eyes of every unfortunate individual who squinted. Without experience, without reflection, without a day's examination of the merits or results of the operation, hundreds in this country took the title of SQUINT REMOVER, and positively employed their pupils and others

to kidnap patients into their operating room. Week after week this system went on, and publication after publication, letter after letter written to shew that Mr. A's knife, was better than Mr. B's hook. I have seen a surgeon operate on at least a dozen individuals, one after the other, and as one went out of the room, washing the eye with warm water, in came another. Come to the light, my dear—there! Keep one eye shut—a decided case of squint gentlemen, sit down love—an assistant secured the eye-lid, in went the knife, and the muscle was divided in a moment. After a time the supply was exhausted, and then it was discovered that some of the patients first submitted to the improved process, were now as bad as ever, and that others turned the eye outwards, which was even more disagreeable than the original squint. What was to be done now? Oh! said Mr. A. "the operation has been badly performed, my plan will succeed in every case, and the eye was of course doomed a second time to be cut. But now that the mania for dividing muscles and tendons, is on the decline, in this country, we may sit down calmly and patiently to an examination of the subject in which we are, and have been, much assisted by a careful perusal of M. Velpeau's work on squinting. He is far from being an indiscriminate admirer of the operation, and at once admits, "that not only great indiscretion, but positive and very wilful falsehood, has been displayed by some of its advocates, in regard to the marvellous success that attended its performance in their hands." It is almost impossible to determine with accuracy the real and ultimate success of the operation on a large scale. According to the author's experience out of three hundred cases, the operation proved successful in about one half. I have performed the operation eighty-four times, and succeeded in fifty cases. It should be remembered that almost all squinting persons see badly with the affected eye, and in some it is complicated with a confusion of vision, or a degree of amaurosis. On looking over M. Velpeau's pages I find no less than nineteen different methods of performing the operation. Well might the talented editor of the Medico-chirurgical Review exclaim "is this the case with any genuinely-established operation in surgery?" I am inclined to think that the necessity of covering the sound eye after the operation, and obliging the patient to exercise the one in which the muscle has been divided, tends much to promote the recovery—in

some instances I have succeeded by this plan without dividing the muscle at all. The plan of Dr. Jurin is not generally known and is entitled to careful examination, he says that when strabismus existed only in one eye, he directed the healthy organ to be closed, when the cornea of the diseased eye immediately assumed its central position, he then requested the patient to fix his attention upon some person who stood immediately before him at a convenient distance, and after the eye had been sufficiently fixed in this position, he recommended that the previously closed organ should be very carefully opened. The cornea of the weak eye soon turns aside when this experiment is first tried, but by judicious repetition, and due perseverance, it is sometimes enabled to maintain its proper position for several minutes, and the defect is eventually removed. By selecting one out of the many contrivances advised for the removal of squinting, that will bring into play those muscles that have long remained inactive, the disease will often be removed, even without an operation. In some cases however the muscle may be divided with very great advantage, the operation is very simple, and not at all difficult. I have no intention of saying how I perform it, the surgeon can select out of the numerous methods that which he likes the best, and will only further observe, that the favourable results have been much exaggerated, and the headstrong manner in which the operation was first performed any thing but creditable. In confirmation of this opinion I extract the following remarks from M. Velpeau's work. "Forced," says he, "to examine for myself the facts published by some surgeons, and to ascertain what they considered to be cures, I can safely affirm that I have seen several of the *operes* acquire a squint outwards, after having lost their squint inwards: not a few retain their squint after a second operation, and others affected with exopthalmia, excessive denudation of the eye-ball, or some other most unpleasant deformity. One effect of such dishonest practices has been to throw a general discredit on the operation altogether; after having enjoyed an almost unheard-of reputation, it has become, in Paris as elsewhere the object of very marked distrust. Little wonder; the public find they have been grossly imposed upon, and hence it is, that not a few who might be remedied by an operation prefer their squint to the risk of being made worse."* As a general rule,

* Supplement to the New Elements of Operative Medicine.

the principle of treatment is first to remove the cause affecting the muscles, and then to restore their power, by continued exertion.

OPERATION FOR FISTULA LACRYMALIS.

When this disease has existed for some time the canal must be restored by the introduction of an instrument. A narrow bladed knife run in a proper direction, that is, from behind the nasal process of the superior maxillary bone downwards and backwards, and a nail headed style slid along the blade as it is drawn out. The style must be sufficiently long to rest on the nasal fossa, and is to be removed and cleaned from time to time; the eye fomented with warm water, and an aperient given. In a few weeks the style may be taken away, the passage being cleared with a probe from below, or it may be worn during the night only; when the parts have become very quiet, there will in general be no difficulty in introducing a very small style through the all but imperceptible fistulous opening that remains. This is, I think, a superior way of treating the disease to the introduction of probes and seatons, or of a tube through which the parts are injected. The introduction of a tube will at first do good, but after a time inflammatory symptoms may oblige its removal, and this is often attended with no little difficulty. This once happened to myself, and the lesson was very useful, I have never employed a tube since, and never shall again. The case is also much hastened by at once opening the passage, much pain and annoyance are avoided; for although the repeated introduction of a probe, may for a time be useful, severe inflammation not unfrequently occurs, and in the end an operation has to be performed. It is therefore better to resort to it at once in all cases.

IRITIS.

I next propose to direct attention to diseases of the iris. Although it would be foreign to our purpose to enter into a minute examination of the anatomy of this membrane, yet it may be necessary to remind the student that it is placed within the anterior portion of the globe, behind the cornea, and before the crystalline lens. It will also be important to remember, that

the anterior surface is covered by a part of the aqueous membrane, at its outer margin it is nearly in contact with the cornea; in the centre they are removed to some distance from each other: this will become more evident when we consider that the iris is a flat membrane, and that the cornea projects. The iris is highly organized. It receives its supply of blood from the two long ciliary arteries, and also from the anterior ciliary vessels; the former, entering from behind, pass through the sclerotic, and are continued between it and the choroid, one being on the temporal, the other on the nasal side of the globe: piercing the ciliary ligament they divide into branches which, embracing the outer margin of the iris, anastomose, so as to form a large vascular halo, from the interior of which branches run towards the pupil, and from these in like manner, is formed a third circle at the margin of the pupillary opening. There is a very free communication between the vessels of the iris and those of the choroid and ciliary processes, and also with the minute vessels of the aqueous membrane.

The nerves of the iris, which are very numerous, spring for the most part from the lenticular ganglion. Two sets are formed, an inferior and a superior, perforating the sclerotic coat at its posterior part. An additional supply is also given to the iris from the nasal division of the fifth.

It will at once be seen that the above is only a mere outline of the anatomy of this membrane; and yet it is sufficiently minute to enable the younger student to trace the connexion of the several parts. This membrane has a highly important duty to perform in the function of vision, regulating the quantity of light admitted to the retina. I think the best anatomists are of opinion that the structure of the iris is muscular, and am certain that I have, with a powerful microscope, detected certain fibres distinct from those formed by the interlacing of blood vessels. Two muscles exist, one an orbicular muscle, surrounding the pupillary opening, and another radiating from the outer circumference of the former to the outer attachment of the membrane: by the action of the former the pupil is contracted, and by the action of the latter the pupil is dilated. Mr. Tyrrell remarks, that "Mr. Dalrymple was kind enough to show him the muscular fibres of the iris under a powerful microscope, and," continues this writer, "has enabled me to compare it with other muscular fibres, so as to satisfy me

perfectly of the structures being similar." Bauer, Monro, and also Maunoir, have described these muscular bands as seen by them, with the assistance of the microscope, and the latter has published a series of interesting experiments, which tend much to convince me of the truth of what he has written.

The student, in the present advanced state of this branch of surgery, will be surprised to learn that little was known of iritis in this country until the year 1800 or 1801. The attention of the profession was, if my memory serves me, first drawn to it by Professor Schmidt, who published some remarks "on secondary cataract and inflammation of the iris after the operation for cataract." The disease, however, is now well known, and, thanks to Dr. Farre, who first demonstrated the advantage of mercury, combined with opium, exhibited to the engendering of ptyalism, in every case of acute iritis, unless contra-indicated by the presence of some specific constitutional disease.* Let us now consider iritis—the symptoms of the disease, its causes, effects, and treatment. I propose, 1st—to divide iritis into acute, chronic, and specific; 2nd—to offer some remarks on the treatment applicable to each; and, lastly, to illustrate the advantage of a certain class of remedies, by a brief detail of one or two cases.

1. *Acute Iritis.*—The symptoms of acute inflammation of the iris are too well known to require a very minute examination; nevertheless, I am perfectly satisfied that diseases of the eye are, by many practioners, even in the present day, very imperfectly understood, and that many young medical men enter the field, armed with a diploma, who know little of the diseases of this important organ. Not long ago I was called to a case of acute iritis, in which nothing had been done, save the application of a blister to the temple, and the exhibition of a purgative. In this case the man was told "the loss of his eye was inevitable;" and so I thought, at the moment I saw him. The iris was contracted and discoloured, the pupil filled with lymph, hypopion existed to

* The limits of this work forbid a more extended examination of the anatomy and physiology of the iris. The student will, however, find every information in the writings of Vesalius, Merry, Haller, Ruysch, Winslow, Petit, Monro, Jourdan, Hovius Soemmering, Bichat, Bell, Young, Morgagni, Wrisberg, Lawrence, Dalrymple. If the anatomy of the eye be a favourite study, I may also mention the magnificent work of Zinn, "Descriptio anatomica oculi humani iconibus illustrata." In the London Medical Gazette, vol. xiii, some valuable papers, by Mr. Thurnam of London, and Mr. Walker of Manchester, on the physiology of the iris, will be found.

some extent, and yet this man recovered sufficiently to see, not only to guide himself, but also to work at his trade, and in three months was comparatively well. After all that has been said and written about the operation for strabismus, what I am going to relate will hardly be credited. I was asked, a few weeks ago, by a surgeon in good practice, if "I had performed the operation for squinting?" Upon my saying nearly one hundred times, and that I found it to answer in many cases, although in some few out of that number it had failed altogether. He said, "Indeed! I have not done it yet: but I suppose you divide the nerve." Thinking this might be an error of the tongue—a lapsus linguæ—I asked what nerve? The reply was, "The nerve running along the inside of the eye-ball." After this I think we cannot better employ our time than in directing the attention of the student to an examination of certain diseases of the eye, and no young man of honourable feeling will be content to acquire that degree of knowledge that shall just, and only just, suffice to obtain for him his diploma; but will go on in his interesting series of investigations until he has so studied the diseases to which man is liable, that he may be enabled, in every case, to employ the proper remedy. Permit me to make one other remark, which cannot be foreign to this investigation. Great care must be taken in the examination of an inflamed eye; the examination must be conducted with the utmost care and gentleness, and in all affections of the deeper-seated structures of the eye, examinations should not be made too frequently, or the organ exposed to the irritations produced by a strong light beaming upon it, and this, too, after a previous exclusion for the last twenty-four hours. I have too often seen the evils of a rough examination of the eye; but I will prove my position by a much greater authority than myself. My friend, Mr. Middlemore, of Birmingham, in his truly valuable work on "Diseases of the Eye," mentions a case in which he had operated for cataract by extraction: the section had healed, and every thing was going on very well. Ten days after this the case was shown to a surgeon, who handed it so roughly, that the patient cried out with pain, and Mr. Middlemore requested him again and again to desist, but not in time to prevent a most severe attack of inflammation, which immediately came on. Such things as these may appear unimportant to men who have paid but a trifling degree of attention to

these subjects; nevertheless, each year convinces me of the necessity of attending to them. They are like the marks in the forest by which an American Indian discovers the passage of friends or foes. A broken branch, a torn leaf, a flattened blade of grass, are signs, which an ordinary traveller would pass over without observation; but to the practised eye of a denizen of the woods, they are alike certain and conclusive.

I trust I have sufficient love of science to lead me to desire nothing so much as the attainment of truth, and that I am not so vain as to suppose that none of my views erroneous, but I feel it a duty thus to bring before my professional friends the result of my experience, that by comparing notes with each other, we may in the end come to fixed and certain rules for the treatment of disease.

I. SYMPTOMS OF IRITIS.

The symptoms of iritis will vary, of course, in proportion to the extent of the inflammation. More or less pain, with slight redness of the eye, announce the attack, and induce the patient to procure professional assistance. The degree of pain varies, and is at times so slight, that the disease is allowed to make considerable inroads before we are consulted; vision may have become impaired, and objects seen as though surrounded by a thick mist. At other times the pain is dreadful, and the forehead, side of the head and face suffer also; the globe is exquisitely tender, and the sclerotic coat soon takes on a diseased action. After dinner, or when in the recumbent posture, these symptoms increase; in fact, anything tending to augment the flow of blood to the part, tends to increase the disease.

As the disease advances, dimness gradually steals over the eye, and at last perception of light is altogether lost. The pain now increases; there is frequently an increased flow of tears, and a change in the colour of the iris.

The first change which takes place in the iris is a loss of its transparency, if I may so describe it; the brightness present in its healthy condition has disappeared, it appears almost without vitality, and, instead of reflecting, absorbs the rays of light. The pupil becomes contracted, and if the iris were originally of a

bright blue or grey colour, turns to a dirty muddy green, and this arises from the formation of fibrin, which is deposited on its surface. There is less change of colour in brown or hazel eyes. In such, Mr. Tyrrell says, "the iris acquires in the last stage of the disease, a reddish brown tinge." I wish to remark, that in speaking of true iritis, I consider that the iris becomes affected in the first instance, and that the other organs, afterwards deceased, become so secondarily. In addition to the symptoms already pointed out, as marking the colour in the alteration of the iris, another appearance is mentioned by Mr. Middlemore, which I have not seen, but which he has twice detected. It is also pointed out by Beer, Conradi, and Robertson. "I have twice seen," says Mr. Middlemore, "the iris acquire a red colour during the existence of iritis; it has appeared as though rendered beautifully and uniformly red by the aid of some subtle injection; in each of these cases the opposite eye was of a blue colour." I imagine this is not a very frequent occurrence. I never saw it; and Mr. Middlemore, in his very extensive practice, only twice.

The best diagnostic mark of iritis is the zone of blood-vessels running near the circumference of the cornea, and placing round it what appears at first sight a belt of one uniform dull red colour. If this is examined a little more closely, the colour will be seen to vary, and found of a deeper hue as it approaches the cornea, gradually growing fainter and fainter as it radiates from the centre towards the circumference. It appears made up of many fasciculi of little minute vessels, filled with red blood, in the sclerotic tunic. Of course this halo of vessels will vary in colour in proportion to the severity of the disease and the particular stage of it.

It may, in the next place, be requisite to point out the marks by which inflammation of the crystalline capsule is distinguished from iritis. In the first place, the peculiar zone of vessels, already pointed out as the characteristic of iritis, is much less distinct, and the peculiar brightness of the iris little affected: the pupil is not altered in form, and there is no intolerance of light. "If," says Mr. Middlemore, "the inflamed capsule is examined, it will be found slightly opaque in various parts; it will be irregularly dotted or marbled; veins or streaks of opaque matter in various degrees of distinctness will be present." If, then, we compare the symptoms of iritis with those of capsulitis,

the former will be found much more severe. The patient experiences more pain, the iris is altered in form and in colour, there is a greater tension of the globe, and much more intolerance of light. We may remark in addition, that the attack of inflammation of the capsule comes on gradually, and that it is not so easily remedied as iritis, by the exhibition of calomel. As it advances towards its second and third stage, the iris will participate in the disease, and it is, therefore, only to be distinguished from iritis in the first commencement of the attack. Guillie, in the Dictionnaire des Sciences Médicales, tome 26, page 89, mentions this complaint, and draws a distinction between inflammation of the iris and inflammation of the capsule.

II. EFFECTS OF IRITIS.

We have now considered, at some length, the symptoms of iritis; its effects are well marked, and will require but a very brief recital. I have pointed out the dull appearance of the iris, as the disease advances, the loss of its circular form, and also the alteration of colour in the iris, as well as the deposition of small flakes of matter (tubercles of fibrin) upon the surface of the iris, near the pupillary margin. This matter is at first of a light yellow colour, but subsequently acquires an orange or reddish brown aspect. The deposition of fibrin is sometimes so great that the anterior chamber is completely blocked up by it. In the worst cases some of the fibrin takes on a suppurative process, and pus is discharged into the anterior chamber: thus onyx is produced.

III. CAUSES OF IRITIS.

The causes of iritis are various; idiopathic, traumatic, or specific. In the two former, the constitution is not primarily affected. The idiopathic form of iritis is the result of those errors of the system which produce inflammation in other parts of the body, or in other textures of the eye. As a simple affection, it will be seen in persons under the age of puberty. The other causes of this complaint are local injuries—a blow upon the eye, injury to the

eye in the various operations for cataract, a cut from the lash of a whip, from a wheat-ear in reaping, or a blow from the small branch of a tree. The worst case I ever saw was induced from a small piece of iron entering the cornea. In such cases a considerable degree of corneitis comes on, rendering the organ so cloudy that it is very difficult to ascertain the precise nature of the attack in the iris. In speaking of the specific forms of the iritis, we must consider syphilitic inflammation of the iris, arthritic inflammation of the iris, inflammation of the iris in scrofulous children, and for want of a better name, the last form of the disease must be examined as chronic iritis.

TREATMENT OF ACUTE IRITIS.

In a young and healthy subject suffering from an attack of acute iritis, the result of local injury, it is absolutely necessary to bleed, and bleed largely, guided more by the effects produced upon the system than the quantity withdrawn. I always order the patient to be bled, either standing or sitting up in bed, from a large orifice, and in ten or twelve hours, if the disease is still advancing, the bleeding must be repeated. I think it worse than useless to apply leeches in the first instance, unless the attack be of a chronic nature; they may, perhaps, give ease to the patient for a few hours; but, as if to mock your efforts, and to laugh at the feeble resistance opposed to it, the disease returns with redoubled severity. After the abstraction of blood it will be prudent to give a purgative; five or ten grains of calomel, followed by a mixture containing Epsom salts and emetic tartar in peppermint water. I am satisfied of the prudence of this plan of treatment; the bowels are thus unloaded, and we have no hindrance to the subsequent measures which become necessary. After you have taken as much blood from the arm as you think advisable, leeches will not only be useful but necessary. The pain will also be lessened by fomentations with warm water, or opium and water. I find this lotion very useful.

℞ Ext. Belladonnæ, ℈i; Tr. Opii., ʒij.; Aquæ fervent. ʒviii. ft. lotio.

The extract of belladonna must, from the first, be placed upon the eye-brow, or under the eye, for not only does it possess the

power of preventing the contraction of the pupil, but even causes it to enlarge, in some cases, after adhesions have taken place. It must, however, be remembered, that the application of eye-waters are of no use in the treatment of this disease, and are only employed as a means of affording the patient temporary relief. I consider this one of the best for that purpose.

℞ Morph. sulphatis, gr. ij.; Aquæ, ʒi.; ft. lotio.

This lotion was first recommended by Dr. Charles Lee, of New York, and certainly relieves the hot and burning sensations of the diseased organ. The bowels freely opened, we must next proceed to employ that most valuable remedy, calomel; and this must be combined with opium, to prevent its acting violently on the bowels. It is very important that an effect should be produced on the system as quickly as possible. We may, therefore, order three grains of calomel and a quarter of a grain of opium, every three hours. And the effect may be increased by a portion of mercurial ointment being rubbed in every night. In very severe cases I have ordered a solution of emetic tartar every six hours, and consider the effect of the calomel has been increased by it. As soon as the system has become affected by the mercury, a rapid improvement takes place in the eye; an extinguisher is placed, as it were, upon the disease: in a day or two the absorption of the lymph commences and is rapidly taken up. The power of vision slowly returns, and the irides, in time, assume the brilliancy of perfect health.

Although I have insisted on the necessity of bleeding in the early stages of iritis, the student must remember, that bleeding alone, will not cure the disease, and if he relies solely on an antiphlogistic plan of treatment, will have to regret the loss of vision in many of the cases he may be called upon to attend. The sheet-anchor of the surgeon is calomel; and this must be given until the system is thoroughly affected. But can we always employ this remedy? No; constitutional symptoms often point out the impropriety of using it at first: the patient must be carefully attended to, the general health improved, and mercury afterwards given. I am, of course, now speaking of the chronic, rather than the acute, forms of the disease. When we cannot, in acute iritis, for reasons already stated, give calomel internally, the blue ointment, com-

bined with opium, must be rubbed in every night and morning, and the following medicine given regularly, as directed :—

℞ Potass. Iodidi, gr. ij. ad gr. iv. ; Syr. Aurantii, ʒi. ; Aquæ Rosæ, ʒix. M. ft. haustus ter in die sumendus.

This is a very valuable remedy, and, next to mercury, the best we can employ. In every case I am called upon to attend, I give small doses of the above, in addition to the calomel and opium, and with the greatest possible success.

The cases I have seen, (and they certainly amount to several hundreds) of acute iritis, not only in private practice but also in the hospitals of London and Paris, warrant me in thus strongly urging the employment of mercury in the treatment of this disease. If used properly, and the disease taken in time, I am fully persuaded, nay, even certain, that in by far the greater number of cases, useful vision may be preserved; and therefore the mercurial plan being certain, ought always to be used. The antiphlogistic plan is uncertain, and ought never to be altogether depended upon. Bleeding largely, and then rapidly affecting the system with mercury, is a plan of treatment that holds out every prospect of success in favourable cases—I mean cases in which we see the disease in its first stage; and even when some progress has been made, very useful vision is frequently obtained by steadily going on in the use of calomel and opium, and the preparation of iodine already mentioned.

Strongly as the use of mercury has been insisted upon, some caution is, nevertheless, required, and the case must be carefully watched if the desired end is to be accomplished. If the disease advances, the dose must be increased; if checked, and the system has become affected, it must be diminished. The abuse of good remedial agents has brought them into disuse, and the advocates of them come in for no small share of censure, through the ignorance of those who mis-employ them. In certain injuries, bleeding is doubtless useful, to prevent, or if present, to subdue, inflammatory action; but, if carried too far, the powers of nature may be exhausted, and the curative process altogether prevented. So, in the exhibition of mercury for the cure of iritis, it often fails to afford relief, because carried too far, and thus begets, or, at any rate, supports, a peculiar state of the system, under which it is

quite impossible a healthy local action can exist. It will, therefore, be necessary to examine the condition of all the important organs of the body, and the way in which they perform their several functions, before commencing a course of mercury; the form of its exhibition, and the strength of the dose, must be regulated accordingly. Here I feel my inability to give plain directions to the student; the necessary information cannot be given in these pages. The disease must be studied at the bedside of the patient, in the wards of our hospitals; the volume of nature must be read; its pages are open to the humblest inquirer, and amply will his researches be repaid. Could the candidate for the diploma of the College of Surgeons, and the College of Physicians, be examined, partly in the wards of an hospital, and made to point out the nature of the disease, its cause, symptoms, probable result, and the treatment necessary, the trade of the grinder would soon cease, his wheel emit none of its brilliant sparks, and in the place of men crammed for the occasion, we should have practitioners alike ornaments to the profession and useful to the public.

II. CHRONIC IRITIS.

In speaking of chronic iritis, I do not allude to that disease which is sometimes found after the more severe symptoms of iritis have passed away. In addition to this, a form of the complaint is now and then present, which, from the slowness of its growth, the mildness of its symptoms, and the length of time it continues, must be termed chronic iritis. It will be well to distinguish between the two forms of this malady; all the train of symptoms already pointed out, are much less acute, and far more slow in their development. In acute iritis the disease may be fully established in twelve or twenty-four hours. In this form of it as many hours may have passed away, and no progress made. The red zone of vessels is far less marked, and appears broken in many places *(an interrupted belt)*; and although the symptoms described as denoting an attack of acute iritis are present, they are not so distinct, and the power of vision less impaired; but, if suffered to run its course, by degrees the organ will become imperfect; and so slowly, so insidiously, does the disease creep on,

that the eye may be all but lost, before the patient has discovered it. In many cases the other eye, at this stage of the attack, becomes dim, and then the patient applies to his medical attendant, and the mischief is discovered. Little pain is experienced; at first there is little or no intolerance of light, and no increase of lachrymation, or, if it exists at all, is too slight to arrest attention.

It will be necessary further to remark, that in chronic inflammation of the iris (not the result of the subsidence of an attack of acute inflammation), no change takes place in the colour of this membrane. I have seen lymph deposited, the pupil closed, and vision destroyed, from long-continued and repeated attacks of inflammation of the iris, without its having lost either its colour or peculiar polish.

It not unfrequently happens that some patients are repeatedly affected with slight attacks of iritis, which, in the end, either altogether destroy vision, or seriously injure it, by rendering the transparent structure of the eye opaque and muddy. In these cases it is absolutely necessary at once to subdue the attack of inflammation; secondly, to ascertain, and if possible to remove, the constitutional derangement on which it depends, and to prevent the patient using the eye in any way that may tend to injure vision; and, lastly, by establishing some permanent counter-irritation, as a blister behind the neck, or a seton, to preserve the eye from additional attacks of inflammation. It will also be necessary to pay particular attention to prophylactic measures, for when once this form of inflammation has set in, it is very liable to return again. It is a singular fact, nevertheless one that is well authenticated, that this disease runs in families. Mr. Middlemore remarks, "I am acquainted with several families, the brothers and sisters of which are blind from relapses of chronic iritis: three brothers and two sisters in one family have lost all useful vision from relapses of this disease, and the eldest of them is not more than 50 years old."

This disease must be looked upon as a less acute form of iritis (of simple acute iritis), but, as already seen, frequently leads to loss of vision. I have at this time the son of a farmer under my care (Mr. Roberts, of Everton) who has repeatedly suffered from attacks of chronic iritis. On the present occasion the disease had advanced slowly, and too insidiously to create uneasiness; a month passed away before any one examined it, and, when I saw him, had

made considerable progress. Regarding this as a very severe case,* I treated it accordingly, and with the best results. In truth, the disease is inflammation, and has a tendency to produce the effusion of lymph and the destruction of the pupil, and must consequently be attacked by the same remedies as acute iritis. It will not be necessary to bleed to the same extent: but in all cases where the patient is young, and the pulse sufficiently full, I prefer bleeding from the arm to the application of leeches in the first instance. After this, mercury, in some form or other, must be given: it will not, however, be necessary to give it in the same doses as in acute iritis: it is much better, in fact, gradually to affect the system with doses of blue pill, combined with opium, hydrarg. c. cretâ and Dover's powder, or any other preparation of mercury that may be found suitable to the peculiarities of the patient's constitution.

Some will not bear mercury in any form—others are so feeble that it is impossible to administer it; but we have happily a powerful remedy in turpentine, which I shall more particularly consider when speaking of syphilitic iritis.

Mr. Tyrrell remarks, in considering the causes of chronic iritis, "That the disease sometimes commences in this form, from the same causes as produce the acute stage; but very frequently it is induced by reducing the acute disease *by antiphlogistic means, without the aid of mercury*: the redness and pain being relieved, and the vision in a degree improved, the patients are considered as cured: whilst this insidious but destructive stage still exists, and goes on to occasion the mischief," which I have described.

Now and then a patient is brought to me in whom the antiphlogistic plan of treatment has been carried as far as possible, and yet the disease has still gone onwards, and the power of vision is all but lost. I have seen such cases many times, and the blanched lips, feeble pulse, pallid countenance, and cold extremities, clearly proved the extent to which depletion had been carried. How are we to treat a patient applying for relief under such distressing circumstances? If the eyes are examined the irides will be found dull, the pupils small, lozenge-shaped, and fixed, from adhesions of the pupillary margin to the anterior capsule of the lens; the zone of vessels round the cornea will be distinct, broad,

* This paper appeared in the London Medical Gazette, 1842. This gentleman got quite well, and has had no return of the complaint.

and of a dirty dull-red colour: this is occasioned by the distension of the sclerotic vessels with red blood.

It is clear we cannot give mercury here; and yet we cannot cure the disease without it. The patient will, perhaps, complain of great depression, loss of strength and appetite; the hands are tremulous, the gait feeble and unsteady: night-sweats and other symptoms indicate a great want of general power. He will very likely experience, also, much pain in the eye and over the eyebrow. This may be removed, by rubbing in night and morning, some blue ointment, combined with opium and belladonna. Under any circumstances, belladonna must be rubbed upon the eyebrow two or three times a day.

Our first efforts must be directed to improve the state of the system, and a generous diet allowed, the bowels kept open with colocynth and henbane, and some mild tonic administered. I generally give the iodide of iron, or the pot. iodid. with infusion of chirayta, or sulphate of quina and infusion of roses.

In a short time, the general health, under ordinary circumstances, will improve. We must then give, in addition to this, small doses of mercury with chalk, and they must be gradually increased, and a blister applied to the back of the neck. This plan of treatment holds out the most reasonable prospect of success; but in such cases, complete recovery, in the majority of patients, is not to be hoped for.

After an attack of either acute, or chronic iritis, should the eye appear weak, particularly if there remains any degree of chronic conjunctivis, the superficial vessels being in an enlarged and atonic condition, the eye may be bathed with the vinum opii and water, or a weak solution of nitrate of silver applied, which will remove "the weakness of the eye" the patient complains of, and restore it to its normal state.

CASE XII.

During the month of November 1842, Mr. L——— a maltster called at my house, suffering from an attack of acute iritis in the right eye. The disease had then existed for some days; he complained of a great pain in the eye, and said "that the whole of that

side of the face appeared to be affected; the disease had come on without any apparent cause; and he had not taken anything for it but an aperient; finding that he was deprived of sight, and that it did not return, he had thought it right to obtain advice." On examination, I found very extensive mischief existing in the iris, more than I had seen in any other case; this structure was so altered in appearance that it could hardly be recognised; the greater portion of its surface was covered with tubercles, in different stages of maturity; some small and of a yellow colour, tinged here and there with pink, others large, and of a reddish brown hue; one had suppurated and discharged its contents into the anterior chamber, producing onyx; the pupil was contracted and irregular, and nearly filled by an opaque deposit, and the margin of the iris was adherent to the anterior capsule of the crystalline lens. Round the cornea was a deep red zone, produced by the sclerotic vessels filled with red blood.

He was at once bled largely, and three grains of calomel and one of opium given every three hours. The bowels had been freely opened by a purgative taken before I was consulted. Some strong mercurial ointment with opium, was rubbed upon the forehead every night, and the extract of belladonna applied all round the eye, night and morning; in addition to this he took the following draught three times a day:—

℞ Potass. Iodidi, gr. ij.; Syr. Aurant. ʒij.; Aquæ ʒx. Misce.

This treatment produced the most happy effects: in three or four days we had proof of the disease being checked; in a week he had lost all pain, and much of the redness was gone, the pus was completely absorbed, and in from fifteen to twenty days the deposits of fibrin were nearly removed. He could now see the window and other large objects, and daily continued to improve; when I last saw him the sight was in a great measure restored, the iris having resumed its natural brilliancy. Business obliged him to leave the house of Mr. B— of Clarbro' where I attended him, and he was to return, if the eye did not go on well; he has not called upon me since, and I find on enquiry he is now quite well, and the eye as perfect and useful as it was before this attack came on. It may be necessary to state, that when it appeared clear the system was brought sufficiently under the influence of calomel; the gums becoming spongy and tender, the dose of the mercurial

was much diminished though not altogether laid aside. As he appeared a good deal out of health, and complained of depression of spirits and loss of muscular power, a better diet was substituted for the strictly antiphologistic one he had previously been kept upon, and he was ordered to take.

℞ Hydrarg. Bi-chloridi, gr. ½; Aquæ, ʒiss.
℞ Hujus Solutionis, ʒi; Decocti Sarzæ. Co. ʒiss.
M. ft. haustus ter in die sumendus.

The result of this case was certainly far more successful than I had ventured to anticipate, more particularly as to the time of recovery, which was much more rapid than I had thought possible, from the severity of the symptoms, and the length of time the inflammatory action had been suffered to go on, before effectual means were employed to subdue it. The result of this and many other cases, induces me most strongly to advise the employment of mercury in the treatment of acute iritis, for although, if used without discrimination, it often does more harm than good, yet if properly employed, with careful management, it seldom fails to effect the desired end.

III. IRITIS FROM WOUNDS.

The symptoms and results of iritis from injury are the same as in the forms already considered, with the addition of the evidence of some injury.

It will be necessary to remove, if possible, the foreign body; but this plan of procedure will depend in a great measure upon its size, situation, and nature. If very small it had better be allowed to remain, unless its removal can be effected very easily, as it will in all probability become encysted. If large, it will be better to remove it, unless of a composition which the aqueous fluid can dissolve.

The treatment of this form of iritis will not differ from that already pointed out, when speaking of acute iritis. In addition to bleeding, I wish strongly to advise the use of calomel, for although it does not entirely destroy the inflammatory action during the presence of the extraneous body, nevertheless the judicious employment of mercury has the power of considerably retarding the injurious results of iritis. The treatment of this form of iritis may, perhaps, be best illustrated by the following very interesting case:—

CASE XIII.

Mr. W——, of Retford, applied to me in the summer of the past year (1841), in consequence of an injury he had sustained in one of his eyes. He stated that some time ago he had injured his eye with a small and very sharp piece of iron—that he had taken some opening medicine, and applied a blister to the forehead over the suffering member. It is needless to point out to the veriest tyro the folly of placing a blister in such a situation during an acute attack of inflammation of any of the textures of the eye.

On examination, a small wound of the outer margin of the cornea could easily be discovered, but no part of the foreign body remained: four or five days had passed since the accident. He complained of great pain—could hardly look at the light for a moment; the tears flowed from the eye; the whole of the cornea was clouded; the iris, as well as I could see, from the circumstances already alluded to, was contracted and discoloured; it had lost its peculiar brightness, and appeared dead; a portion of the pupil was filled with an opaque deposit, and hypopion also existed; the red zone of vessels and other distinctive marks of iritis were also present. He was largely bled; leeches were applied afterwards, and the system rapidly affected with calomel: belladonna to the eye-brow, and three grains of potass. iodid. three times a day. Under this treatment the case gradually improved, and the poor fellow recovered his sight perfectly: the only thing to regret was a slight opacity caused by the wound in the cornea; but this was not sufficiently large to interfere, very materially with useful vision.

III. SPECIFIC FORMS OF IRITIS.

Without entering into a very minute examination of syphilitic iritis, I will, however, venture to express the opinion that in the great majority of cases, in which an attack of syphilitic iritis comes on, no mercury has been taken for the cure of the primary disease. It has been remarked that, in addition to pure syphilitic iritis, there is another disease which very closely resembles it, and which

has been termed pseudo-syphilitic, being compounded of two states of the system (as regards its cause), viz., the syphilitic and the mercurial. Mr. Travers here observes that, although "iritis is frequently met with where no mercury has been taken, it is seldom or never seen as a sequela of syphilis, where the system has been brought under the influence of mercury." Mr. Hewson, who has devoted much attention to an examination of the diseases of the eye, writes—"iritis, the result of syphilis, is rarely observed except where mercury has been inefficiently or inadequately administered." Mr. Middlemore observes, with his usual force and accuracy, "from a careful review of all the cases which have fallen under my observation, it appears to me that iritis occurs much more frequently after a venereal sore has been healed without mercury, than when this medicine has been used for its cure, and also that it occurs with the greatest severity, as well as with the greatest frequency, as one of the secondary symptoms of syphilis, when the original disease (the chancre) has been allowed to heal without the administration of hydrargyrus. It is said that inflammation of the iris may occur as a consequence of those anomalous ulcerations about the genitals, which are presumed to arise independently of venereal affections; just in the same way as pure syphilitic iritis results from genuine chancre. This may be the case. I am not prepared to disprove the opinion; but I certainly do not believe it to be correct."

A very careful examination of this subject has fully convinced me that iritis comes on much more frequently after chancre where no mercury has been given, and also that it is much more severe. If the reader examines the cases of syphilis reported by Dr. John Thompson, and also by Mr. Rose, treated with mercury, iritis is mentioned as a not very unfrequent secondary affection. I have seen cases in which women have been attacked with iritis, having contracted the venereal disease from their husbands, and through delicacy, or ignorance of its nature, failed to mention it to their medical attendant. Mr. Middlemore quotes a case originally recorded in the Medico-Chirurgical Review, where iritis occurred in a nurse from syphilitic ulceration around the nipple, produced by suckling a child whose mother had the venereal disease prior to its birth, and this nurse had taken no mercury for the sore around the nipple. This writer quotes another case exactly similar.

Mr. Lawrence has noted one peculiarity in syphilitic iritis, viz. that the inflammation is always of the adhesive kind, for "he has never observed it to terminate in the effusion of pus:" and this fact was proved in the case of a lady, who had inflammation of the deeper-seated tunic, from the extension of the inflammatory action, which originally constituted syphilitic iritis, and which ended in the bulging of the sclerotica, which appeared distended with pus. An opening was made, but none was discharged, and Mr. Lawrence concluded that it was lymph, and not pus.

In the treatment of syphilitic iritis it will be advisable to bleed generally, or locally, according to the condition of the patient, and afterwards freely to evacuate the bowels. By the former plan the circulation will be lowered, by the latter the system prepared for the exhibition of mercury, which must be administered in such doses as the peculiar nature of the case points out.

Mr. H. Carmichael, of Dublin, has advised in certain cases the administration of turpentine (that is, in cases where mercury cannot be given) as a valuable substitute for calomel: he advises it to be administered in this form.

℞ Olei Terebinth. Rect. ℥j ; Vitellum unius ovi, tere simul. et adde gradatim emulsionis amygdalarum, ℥iv ; Syrupi corticis Aurantii, ℥ij ; Spir. Lavandulæ compositi, ℥iv ; Olei Cinnamomi guttas tres vel quatuor. Misce. Sumat cochlearia larga duo ter in die.

It is needless to remark that belladonna must be applied to the eye-brow as in the other forms of iritis, and blisters may be tried in its more chronic form; but in no kind of inflammation of the iris are they productive of so little good.

IV. SCROFULOUS INFLAMMATION OF THE IRIS.

The very great difficulty we have in obtaining a view of the eyes of children, frequently causes this disease to be overlooked, and considerable progress is often made before its true nature is sufficiently ascertained. Mr. Lawrence remarks, "in strumous children inflammation commencing in the external parts of the eye extends to the iris. Thus strumous iritis is usually attended by some change in the structure of the cornea. The opaque state of the cornea prevents you from observing the changes taking place in the iris, so that the very existence of iritis is not known until it has gone through its course, and come to an end."

But from the frequency of its occurrence it ought always to be suspected, and the most careful examination made, and iritis will, in the great majority of cases, be found combined with inflammation of the cornea, and also of the membrane covering the aqueous humour in strumous children. Its effects are similar to those produced by the other kinds of iritis, and may lead to a change in the colour of the iris, to contraction and closure of the pupil, adhesion of the iris to the surrounding parts, or staphyloma.

But how are we to treat such cases? Bleeding and mercury, to the extent already advocated, would make matters worse. In the early stages, in a moderately strong child, a few leeches may be applied to the lower lid, and the bowels must be freely opened with a full dose of calomel and rhubarb. I think the best way of administering mercury in these cases is in the form of the blue powder—three grains of hydr. c. cretâ, five of sesquicarbonate of soda, and two of Dover's powder, may be given every night at bed-time. If we give calomel, push it to ptyalism, and still go on with it, under the idea that it is the proper remedy, I apprehend the patient's constitution will, in nine cases out of ten, be seriously injured, and vision either altogether lost or very seriously impaired. In such cases the exhibition of the sulphate of quinine is followed by the happiest effects. As the constitution improves under its influence, vision improves also, and the improvement of the general health of the patient appears simultaneous with the improved condition of the eye. The salicine is also a valuable medicine, and may be given where quinine disagrees. I knew a lady suffering from a disease of this nature in which quinine could not be taken, but where the salicine was administered with the happiest effects. It appears that it does not possess any alkaline principle, similar to quina or cinchona, and is altogether inferior to them. M. Magendie remarks, "it is a powerful febrifuge, as I have verified in numerous cases of intermittent fevers at the Hôtel Dieu. I have frequently found it succeeded when the sulphate of quina has failed, and vice versâ."

The hydrochlorate of baryta has been highly spoken of, both by Mr. Phillips, in his Lectures on Surgery, and also by Dr. Payan, as a valuable remedy in strumous ophthalmia. Lisfranc also speaks in high terms of its excellent effects. I have only as yet tried it in one or two cases, and cannot therefore speak from ex-

perience of the advantages attending the administration of it, and I am less inclined to do so from having repeatedly witnessed the advantages derived from the remedies above mentioned, more especially the sulphate of quinine.

The local remedies are the same as in the other forms of iritis; and only useful where you have spasm of the lids: the opium and warm water, as hot as can be borne, will frequently afford relief, and give great comfort to the sufferer. In the latter stages of the disease great irritability of the organ is often complained of, and this may easily be removed by the daily use of the vinum opii, alone, or combined with a weak solution of the nitrate of silver; half a grain to an ounce of water.

In speaking of syphilitic iritis, blisters were considered of little use: in this form (strumous) of inflammation of the iris, counter-irritation must always be employed. As soon, therefore, as the inflammation is somewhat checked by the application of leeches, and the administration of a brisk purgative, blisters should be applied behind each ear, or to the back of the neck, and kept open: or, what is better, a small seton may be placed in the neck or arm: this of course will leave a mark, and must not be attempted, if the patient is a young lady, or at any rate must be placed where it will be covered by the dress.

Air and exercise, under proper regulations, must be indulged in; the food should be light, and easy of digestion; the body must be sponged with vinegar and water, and rubbed dry with a rough cloth, and every means taken to improve the general health, and to remove that peculiar state of the constitution on which the local disease is evidently dependent.

V. ARTHRITIC INFLAMMATION OF THE IRIS.

This peculiar kind of inflammation of the iris, as its name implies, arises in persons who are constitutionally predisposed to gout. It may occur during an attack of gout in some other part of the body, but this is not very usual; it may alternate with gouty inflammation in some other situation, or it may take place from its own proper exciting cause.

The first symptoms of arthritic iritis are very mild, and often

not sufficiently severe to decide the nature of the disease, unless regarded in connection with the constitutional condition, and history of the patient. There is generally a slight creeping, tingling, uneasy sensation about the face and eye-lids, the eye being somewhat vascular and intolerant of light; as the disease advances these symptoms are aggravated and others not at first existing are added to them. The vascularity of the sclerotic is, at this stage, somewhat increased, some of its vessels being evidently enlarged; a slight zonular arrangement around the cornea may also be distinguished. It will not be necessary to say much about the causes of arthritic iritis; they may be divided into predisposing and exciting; the former arising from what may be termed the gouty diathesis, the latter are many and various; such as inducing an attack of dyspepsia by intemperance; exposure to a moist atmosphere without proper clothing or active exercise; the retrocession of gouty inflammation in some other part; traumatic opthalmia or a severe blow upon the eye may also be classed among the exciting causes of gouty iritis. The last, however, is by far the most common cause; I have known several instances where a gouty individual has received a blow upon the eye, producing only in the first instance inflammation of the conjunctiva, but which after two or three days, has degenerated into iritis of a very severe character.

In the great majority of cases, our prognosis will be favourable on the first attack of arthritic inflammation of the iris, but when any one attack has been preceded by several others, in a constitution thoroughly gouty, and in a patient addicted to habits of intemperance and free living, the opinion will of course be less favourable; for, changes in the colour of the iris, and in the form and transparency of parts will frequently be present. However, persons may have many relapses of arthritic iritis, without experiencing, as a necessary result, any material impairment of vision.

It appears that the iris is the only texture of the eye which is particularly prone to gouty inflammation, from which we may conclude that there is something, either in its formation, or structure, or of both combined, in consequence of which its proper texture is more particularly liable to inflammation than any other portion of the eye. This fact may also be observed in other parts of the body, particular textures being especially liable to certain

forms of disease, and the same rule obtains with regard to the eye.

TREATMENT OF ARTHRITIC IRITIS.

We shall be better prepared to examine the treatment of this form of iritis after our examination of the nature and causes of gout (see gout): the necessity for severe antiphlogistic measures, will depend on the existing symptoms, and on the strength of the patient's constitution. If there be much pain, great excitement, and a full strong pulse, bleeding will of course be required; but it must be regulated by the peculiarities of constitution, always more or less present in gouty individuals; as a general rule it is not required, on the contrary, in the great majority of cases, it must not be employed. The next remedy we must employ is a brisk purgative, such as:—

℞ Tr. Sem. Colch. ʒss; Magn. Carb. gr. x, Magn. Sulphatis, ʒij; Tr. Card. Co. ʒij; Aquæ Cinnam., ʒx. ft. haustus

This may be repeated in six hours, and also in diminished doses the next day.* When there is much pain, whether in the eye-brow, nose, or eye-ball, advantage will be derived from friction over the eye-brow with mercurial ointment and opium: if the pupil is contracted belladonna must of course be used as directed in the other forms of iritis; the pain will also be much relieved by giving five grains of Dover's Powder, and two of calomel, twice a day. When the pain is intermittent, and the patient suffering from severe frontal pains, with hemicrania, the sulphate of quina may be given with perfect propriety.

Counter irritation is very useful and should be maintained in some active form throughout the duration of the disease. Fomentations may be required in some of these cases, and as they are only used for the purpose of relieving pain, warm water is perhaps the best we can possibly employ. It is necessary to urge as strongly as possible the adoption of prophylatic measures, as soon as the gouty inflammation is removed, and it is the duty of the medical attendant to inform his patient, that this peculiar disease of the iris has a tendency to return, and that repeated attacks may

* ℞ Magn. Carb., gr. v; Tr. Sem. Colch., ℥v; Aq. Menth. Pip., ʒss. M. ft. haustus ter in die sumendus.

seriously injure the eye; and it will be for him to point out also the necessity of temperance, and the probability of indulgences at the table, and excess of wine, causing a return of the disease. What has been said in speaking of the prevention of gout, applies to arthritic iritis and need not be repeated.

In conclusion it is only necessary further to remark, that, in the more severe forms of iritis, the room must be darkened; and when it is necessary to examine the eye, it must be done as gently as possible: nor must a full stream of light be allowed to beam suddenly upon it, nor is it right that the weakened organ should be long exposed to its influence.

Of course, during the active inflammatory stage, the strictest attention must be paid to the diet of the patient; little or no solid food must be taken; in fact, the most rigid fever diet of our hospital should be enforced: this, in private practice, will be difficult to accomplish, and, if not attended to, will render, in a great measure, useless the best possible treatment. It is, therefore, necessary that the importance of attending to this diet should be enforced, in the strongest possible manner, and if told that the restoration to sight, or loss of vision, will entirely depend upon the strictest attention to the orders given, few will be so foolish as not to obey them; if they do, the surgeon will have the satisfaction of knowing that he has done his duty, and the patient may one day have to lament most bitterly his extreme folly.

MYOPIA.*

Short-sightedness, is not unfrequently a congenital defect, many members of the same family being myopic. Short-sighted persons can read very small print with the greatest facility, and their power of vision is much increased by looking through a small opening in a card. It is a very general opinion that the eyes of near-sighted persons are stronger than others not having that defect; this is not however true, and the idea probably arises from the fact, that as the cornea becomes flattened by age, the increased refraction of light, is, to a certain extent, removed by those changes taking place which belong to old age. Myopia usually appears, at

* μυω, occludo, ωψ, oculus.

or about, the period of puberty, and it is said that the defect arises from the too rapid increase of certain parts of the eye, to remedy which Mr. Guthrie has advised the application of leeches to the lower eye-lid. This is no new idea; Bannister recommended them in 1662, and Mr. Middlemore "has tried the plan, but it has most unequivocally failed." Myopia evidently depends on an alteration in the structure and form of the eye, and can only be relieved by the proper use of concave glasses, which must not, however, be too incautiously and indiscriminately adopted. It is very desirable that a myopic person should be a good deal in the open air, directing the eyes to distant objects, rather than employing them in fine needle work, reading, and writing which have a tendency to increase the defect. In the next page I shall have to speak of the evils arising from the use of a single glass, but will here observe that the patient suffers less injury by using a proper pair of spectacles than by straining the eye with one glass—thus making one eye do all the work, instead of equally dividing the labour. When proper glasses are selected they do no harm. "I have used," says Mr. Lawrence, "near-sighted spectacles for twenty-five years, but my eyes are not more near-sighted than at first." If spectacles are used from the first, a short-sighted person has seldom occasion to increase their power, but this is not the case, where one glass only is employed.

PRESBYOPIA.*

Long-sight.—This defect arises in persons between fifty and sixty, who in attempting to read a newspaper or very small print cannot do so, unless it is held nearly a yard from the eye. This change in the powers of the eye slowly creeps on with our years, and is very often not discovered until pointed out by those around us. The cornea is less prominent in elderly persons, and it is possible, the lens also loses some little of its convexity. This state of the eye may be present in young persons, and now and then is congenital. The sight can only be improved by the use of convex glasses, which must be procured as soon as the affection arises, and selected of a power that will render minute objects distinct without adding to their size.

* πρεσβύς, senex, ὀπτομαι, video.

SELECTION OF SPECTACLES.

If glasses are used too soon, after an operation for cataract, the patient will very shortly require others of increased power. After proper ones have been selected, they are at first to be used with great caution, and only for a short time.

Cataract Glasses.—A cataract glass should be small, and of a diameter not exceeding three-quarters of an inch, and placed in a broad dark rim, by which means a limited quantity of light is admitted, and much confusion of vision prevented. They have also the advantage of being much lighter than the ordinary kind of spectacles.

Glasses for Defective Vision.—Whenever a natural defect can be relieved or obviated by artificial lenses, let them be obtained as soon as possible, for in addition to the comfort afforded, the eyes are saved from congestion; two kinds of spectacles must be provided, one pair for looking at distant objects, the other for reading. I may state, on the authority of Mr. Tyrrell, that when it was the fashion to wear a single eye-glass many persons lost useful vision in one eye, in consequence of the almost exclusive employment of the other for minute purposes.* If ordinary spectacles are objected to, the patient must procure such as can be suspended round the neck, but which must contain two glasses.

Sir E. Blagden, Dr. Kitchener, Mr. Middlemore, Mr. Lawrence, and Mr. Tyrrell, have all pointed out the evils of employing glasses of a very high magnifying power, and quote instances of severe suffering being produced, from a too great anxiety to improve the sight, by rapidly increasing the power of the spectacles employed to assist it. "Seeing," says Dr. K., "that I could not see what persons with common eyes frequently pointed out to us, as well deserving my attention, I paid a visit to an optician and purchased a concave eye-glass No. 2. After using this for a little time I accidently looked through a concave No. 3, and finding my sight much sharper with this, than with No. 2, had my spectacles glassed with No. 3, which appeared to afford my eye as much assistance as it could receive. After using No. 3, for a few months, I chanced to look through No. 4, and again found the same in-

* Vol. IV, p. 524.

crease of sharpness, &c., which I perceived before when I had been using No. 2, and first saw through No. 3, therefore concluded that I had not yet got glasses sufficiently concave, and accordingly procured No. 4; however this soon became no more stimulus to the optic nerve than its predecessors, No 2 and 3 had been. I then began to think that the sight was subject to the same laws which govern the other parts of our system, i. e. an increased stimulus by repetition soon loses its power to produce an increased effect. Therefore I refused my eye any more assistance than it received from spectacles glassed with No. 2, which I have worn for thirty-one years, and it is very nearly, if not quite, as sufficient help to me now, as it was when I first employed it." It is better altogether to dispense with glasses, but if absolutely required, to use them as little as possible, and only occasionally, employing those glasses which neither increase nor diminish objects; assisting vision without giving rise to pain. These rules ought to regulate the selection of spectacles at all ages whatever the defect requiring their employment. When it is desirable to protect the eyes from much light, then glasses with a dark tinge ought in my opinion to be selected, as they simply modify the light, without changing the colour of surrounding objects. Blue and green glasses are delightful during the time they are used, but when taken off every thing appears tinged with red; and if very dark, and worn too long, the eyes cannot sustain even a very moderate degree of light.

Lastly, let me urge the importance of having glasses of good material and accurately ground, in order that the refraction may be as perfect as possible, and the power of both glasses the same. Much knowledge is required to accomplish this; and if good glasses are required, some respectable optician must be consulted. Advertising opticians, of every grade and class, from the highest to the lowest, are not to be depended on, and I advise both my readers and patients, requiring spectacles, as they value the blessing of sight, to avoid them.

"Non est tibi fidendum, ut qui omnes fefelleris."

PART II.

CHAPTER II.

ON THE TREATMENT OF FISTULA.

Under the term *Anal Fistula* may be included every species of fistulous track situated around or near to the verge of the anus, whether it communicates with the cavity of the intestine or not; occupying the cellular tissue, the opening may be formed in the skin, or on the mucous surface of the intestine alone; or both these surfaces may be perforated, so that pus and gaseous or stercoraceous matter issue from the external opening. Hence they may be placed in two divisions, the *complete*, and the *incomplete*, the latter presenting two varieties, the *internal incomplete* or blind fistula when the abscess external to the rectum communicates only with its cavity, and the *external incomplete*, when the pus is voided from a suppurating cavity which as yet does not communicate with the rectum. It may however be remarked, that each kind in time becomes complete, the rectal abscess progressing towards the skin, and the anal burrowing along the sides of the rectum. Other varieties of this affection are met with in practice, as in the case where we have several openings to contend with, or where the malady is complicated with disease of other organs, or where, depending on some remote source of suppuration, the matter has to pass a considerable distance before it can reach the opening by which it passes either into the rectum, or escapes externally; these will of course be noticed in their proper place.

I have no intention to lay claim to any thing that is new, in the treatment of this very frequent disease. After the number of

works that have appeared from the earliest times to the present day; after the talents of so many surgeons have been devoted to the task; and after the able remarks of Sir B. C. Brodie, in the Medical Gazette (vol. for 1835-6) much additional information could scarcely be expected; and yet, some epitomised account of the treatment advocated, with some remarks on the plan, I have found to be most successful in numerous cases, may not, perhaps, be useless to the student, nor uninteresting to my professional brethren. My attention was more particularly directed to this disease when in Paris, both from the great number of cases that came under my notice, and the difference in the mode of performing the operation; for no English surgeon, entering the Hôtel-Dieu for the first time, can fail to draw a comparison between the operation there performed, and that he has constantly been in the habit of seeing in his own country. I have just remarked, that the number of cases admitted for operation, into the wards, under the care of M. Roux, appeared to be very great; but I could not learn whether this arose from the complaint being more frequent in Paris than in London, or from the celebrity this splendid operator has obtained, inducing all, who possibly could, to place themselves under his care: for during my sojourn there, he certainly had more cases of fistula than any other of the surgeons. I know of nothing in the diet, or mode of life, of our continental neighbours, more likely to produce this malady than in England. This, however, leads us to consider,

I. THE CAUSES OF FISTULA IN ANO.

We have long been too apt to call every formation of pus, situate near this part, a fistula, and this wrong appellation has, not very unfrequently, given rise to a plan of treatment certainly not calculated to produce the desired effect. Our ancestors supposed any small opening, leading from a large and deep cavity, containing matter, to be a fistulous opening; and with this term they also coupled an idea of induration, and supposing this hardness to be a cause, and not an effect, of the disease, and having no idea that it could be removed, not thinking that when the cause was removed, this hardness, as a matter of course, would disappear also;

and concluding the proper treatment to consist in the removal of such callosity, they vigorously attacked it, with the view of either at once removing it with a cutting instrument, or destroying it by the application of some powerful escharotic. In speaking of the causes of fistula, we shall do well, perhaps, as we go on, to describe the symptoms attendant upon each form of the disease.

Among the most common causes of fistula in the anus, are injuries caused by the pressure of foreign bodies passing with the fæces, upon the mucous membrane at the end of the rectum, the rupture, inflammation, and ulceration of the small valve-like lacunæ of this membrane, and the suppuration of hæmorrhoidal tumours. The tumour, if internal, bursts into the bowel, and, on the other hand, if it arises from an external pile, the opening is not sufficiently large for the complete evacuation of the matter and the sides of the cavity continue to supply the discharge.

Mr. Cooper remarks that collections of matter, from inflammation, wherever formed, if they be not opened in time, and in a proper manner, do often burst. The hole through which the matter finds vent is generally small, and not often situated in the most convenient, or most dependent part of the tumor; it, therefore, is unfit for the discharge of all the contents of the tumor, and instead of closing, contracts itself to a smaller size, and becoming hard at its edges, continues to drain off what is furnished by the sides of the cavity.

All abscesses near the rectum, may, without some little care and attention in their examination, be mistaken for a fistula; when suffered to burst, the little opening with its indurated edges, leading to a large hollow cavity; the daily discolouration of the linen, by a slight discharge from its sides of matter, and the general hardness of the surrounding parts, all tend to confirm the supposition that there is a fistula; nor is the difficulty lessened by the varity of forms such abscesses assume. Sometimes the patient is attacked with rigors, followed by pain in the part, and hardness of the buttock, which assumes a bright red tinge; in a few days a portion of the swelling becomes of a deeper red, the integument covering it grows gradually thinner, and a sense of fluctuation is communicated to the finger. However great may have been the pain—however tender the part—much as the general system may have sympathised—may have suffered—all the unfavourable symp-

toms subside with the evacuation of the matter. The redness, sometimes, is more diffused, the hardness being less circumscribed; the skin assuming an erysipelatous appearance. The inflammation here is evidently more superficial, and the disease subsides without the formation of any considerable quantity of matter.

Again, neither of the above states may be the condition of our patient: instead of the bright red on the surface of the skin, with considerable pain, and a large, hard, and circumscribed tumor, or an erysipelatous blush over the surface of the skin, we may have a destruction of the cellular membrane, and a carbuncular kind of inflammation. The skin is of a dirty red colour, something like the broken surfaces of an old brick, or even may assume a purple tinge: the surrounding parts, it is true, are something harder than usual, but they do not communicate the peculiar feel which we have either in phlegmon or erysipelas. The sufferer has, at first, a full, hard, whipcord-like pulse, and great thirst; complains of head-ache, and is very restless. The tongue is dry and coated, and the motions unhealthy: there is some feeling of tenderness over the region of the liver, with a peculiar sallow countenance, if the disease be not checked by proper treatment, the pulse becomes faint, fluttering, and unequal; the strength gradually decreases. The matter is small in quantity, and of a peculiar unhealthy character, and the adipose membrane is sloughy throughout the whole extent of this discoloured surface.

It has been remarked by Mr. Pott that the disease now and then commences in the induration of the skin, near to the verge of the anus, but without any pain; the hardened surface gradually softening, at length breaks, and the matter is discharged. For the most part it is healthy and small in quantity, and the wound being superficial soon heals; it now and then, however, happens that the cavity is of very considerable size, and the matter discharged, large in quantity and particularly offensive. I remember the case of a poor woman suffering from softened tubercles of the lungs, who was not aware of the existence of a fistula before the abscess broke one night, when in bed, and discharged a considerable quantity of matter. Sir B. C. Brodie has related the case of a gentleman who was not aware of the existence of any local disease. He had for some time past been subject to head-ache, was languid, and obliged to go home and lie down for a few hours in

the middle of the day. One morning, as he was walking in the street, the abscess burst, and discharged its contents, which was the first intimation he had of its existence.

In cases like this, it is quite evident that to prevent suppuration is out of the question; the sooner matter forms the better; nature is therefore to be assisted by fomentations with warm water and linseed meal poultices. Mr. Pott used to allow the skin to become very thin before he made an opening, but in the present day it is thought (and doubtless is) better to freely evacuate the contents of the abscess as soon as matter is formed; leeches and cold lotions are worse than useless, and in some cases I have even seen them continued long after the matter had formed. This kind of tumour is generally found in persons of very full habit, as butchers and farmers; in men who consider it necessary to partake of animal food three or four times in twenty-four hours, and therefore, in some cases it may be necessary, if the pain be great, and the constitutional symptoms run high, to bleed, and to moderate the inflammation by gentle cathartics; or one or two doses of calomel, followed by saline aperients, and very small doses of emetic tartar. If the inflammation be of the erysipelatous character, it is of no use to remain until matter forms; the quantity is very small in comparison with the size of the swelling, which is, in truth, not a separate cavity containing pus, but a dead, sloughy, fœtid condition of the cellular membrane; it is, therefore, evident that the sooner we lay this open with the knife the better: if we remain till the matter comes to a point we may remain long enough; we are waiting for that which will never take place, and all the time that we are looking on with our hands in our pockets, doing nothing, the disease is extending itself into the surrounding parts.

But I have mentioned a third form in which the skin puts on a dirty brick-dust or purple colour, and has a doughy feel, and is possessed of little sensibility: when conjoined to such appearances we have a weak, small pulse, a declining appetite, a continual drowsiness, a failure of strength, and lowness of spirits, the case becomes truly fearful: for experience teaches us that death will sooner or later terminate the case. It is needless to point out the subjects of such attacks; there is evidently some want of tone in the system—some want of nervous energy; this may be consti-

tutional, but more frequently we find it produced by intemperance and dissipation. Strangury, dysury, and sometimes complete retention of urine, may be produced by abscesses near the rectum and neck of the bladder, of course more frequently when the abscess has formed; in the latter situation, the retention may continue until the evacuation of the pent up matter; or commencing with the first blush of inflammation, subside in ten or twelve hours, long before suppuration takes place.

It has often been attempted by designing quacks to throw a cloud of mystery over diseases of the rectum, endeavouring to separate them from the principles of general surgery; and it would be well if the public mind were disabused from this foolish notion: it would be well for them to know that the human frame can only be regarded as one; to be aware that the stomach, brain, lungs, heart and intestines, are not to be acted upon as mere mechanical contrivances for the transmission of certain extraneous substances; on the contrary they are highly organized, highly sensific parts, giving and receiving acute sympathies to and from the other portions of the economy; and this knowledge alone will enable them to avoid the non-cutting operations of designing charlatans, the following, whose creed is either the besetting fashion or besetting ignorance of the present day. It is upon the public at large, that the knaves fatten, while the terrified and poisoned victims quail under their grimaces, and totter to an untimely grave under their ligatures and drugs. "But," says Mr. Liston, "there is no such difficulty as has been supposed in understanding the nature of diseases of the rectum: the principles which should guide their management are simple and the means operative, and otherwise easily enough applied."

The cause being removed, the local treatment is very simple, and remedies may be applied to the part with every prospect of success, and the hope of speedy relief, with every certainty of that hope being realised, honestly held out to the patient. But to what are we to trace congestion of the lower bowel, hæmorrhoids, protrusion of the lining membrane, every kind of inflammatory swelling, acute and chronic abscess, and almost their invariable result—*Fistula in Ano?* In my opinion, to a disordered condition of chylopoietic viscera, and to some irritation or enlargement of the genito-urinary organs. The evacuation of the contents of the

alimentary canal, and a prevention of their accumulation for the future, an improvement of the condition of its lining membrane, and the secretion from it by injections and a well-regulated diet, must therefore be enjoined; nor must it be forgotten that such a state of things is frequently produced by a derangement of the liver; hepatic diseases must not therefore be overlooked. The best medicine to effect this will be small doses of blue, and compound rhubarb pill at bed time, with a warm aperient draught morning and mid-day.

Again, some cases will require attention to be paid to the viscera of the pelvis; in fact, anything which tends to produce or keep up irritation must as soon as possible be removed.

Some persons are habitually costive, which is almost always accompanied with a painful distension and enlargement of the hæmorrhoidal vessels, both internal and external; if a considerable load of hardened fæces be detained in the large intestines, the system generally becomes disordered; and the symptomatic fever, accompanying the formation of matter, is considerably increased by this state of things; if then, the vessels surrounding the rectum are distended, as they are both large, and very numerous, it necessarily follows that all the evils of inflammation and irritation are augmented. Hence we must employ a mild laxative, and cooling diet; clysters of warm water should be frequently thrown up the rectum; this will not only soften the swollen and indurated piles, but also tend to prevent the formation of matter. I have spoken of habitual costiveness as a frequent attendant upon this kind of inflammatory swelling. Persons so afflicted will do well to study the rules laid down by Dr. Burne, in his late valuable work. This condition of the body may, I am certain, be removed by making it a rule to endeavour always to evacuate the contents of the bowels at one stated period,—say after breakfast; by never resisting the calls of nature, and by the frequent use of lavements: no patient can object to so simple a remedy; and if relief can be obtained in a few minutes by the injection of a few ounces of warm water, surely so simple a plan must be far preferable to the daily exhibition of drastic pills and violent purges. The evil ends not here: by the constant use of purgative medicines, it is difficult to obtain any evacuation of the contents of the bowel without their use; and I have been consulted in numerous cases where

this costive state of the body was induced by the folly just alluded to, and in which I have succeeded at once in effecting a cure by the simple plan above mentioned.

We find in many patients who consult us for diseases of the rectum, that this is not the only complaint under which they are suffering; and before we decide upon an operation it will be necessary to discover whether any symptoms are present denoting the impossibility of effecting a cure by the usual means; for it would be unpardonable only to discover this when we find that the divided sinus will not heal. Abscesses near the rectum are frequently present in patients labouring under diseases of the lung: it will, therefore, says Sir B. C. Brodie, be very prudent to ascertain if they exist. "Persons," he continues, "with diseased livers and other visceral diseases, are liable to the formation of such abscesses." Two reasons, therefore, will prevent our operating in such cases: first, because we should not get the parts to heal; and secondly, because if we did so, in all probability the disease of the internal organ would then proceed with increased speed: and for the reason first stated no surgeon would be justified in performing any operation if stricture or carcinoma be present; it is useless to do so—the parts will never heal, however frequently we may lay them open. All we can do in such cases is but little; we may endeavour by air and proper exercise to render a miserable life as tolerable as possible, under existing circumstances; by opiates or injections of starch and opium, to relieve the poor creatures' most acute sufferings; and by frequently changing the linen, and washing the parts with warm water, and a solution of chloride of lime and water, to render them as comfortable as we can.

II. THE TREATMENT OF FISTULA IN ANO.

From what has already been said in speaking of the causes of this disease, it will at once appear evident that before any operation be attempted for the relief of the local affection, the general state of the patient's health must be attended to. If the fistula has been the result of constipated bowels, that must be obviated, and, in fact, whatever may have been the predisposing cause, it must be

removed. The great fault of the hospital practice in Paris is non-attendance to the state of the system. French surgery consists in the dexterous performance of difficult operations; they combine not the office of the physician with that of the surgeon; and no man can be a good surgeon who is not at the same time fully competent to attend to the medical as well as surgical treatment of his patient; in truth, all the best surgeons of the past and present day have been and are good physicians also. To quote the words of a very high living authority, "surgery in France is nothing but operations, and the after treatment in cases of operation is little attended to." The treatment of these cases as far as the knife is concerned, consists in laying open and dividing the sinus or sinuses in such a way that matter cannot by any possibility be retained; such cavities should be opened into the rectum. The dressing should consist of a bit of thin lint, covered with some simple ointment, as dry lint is very apt to produce irritation and uneasiness.

When the intestine is found to be separated from the surrounding parts by the matter, the operation of dividing it should be performed at the time the abscess is first opened, and not deferred. If it be done properly, little additional pain will be experienced, so little in fact that the patient will be unable to distinguish the opening of the abscess from the cutting of the rectum; but if left for a time, another operation has to be performed, and the patient is kept in a feverish state of anxiety by the continued dread of a second cutting. Mr. Liston, however, is opinion that this ought not be done; he observes, that "it has been recommended that in abscesses extending along the gut, the cavities of the bowel and abscess should at once be laid open, and into each other, by the same incision; I have done so, but always found the cure to be tedious. It is better that the matter should first be evacuated through an external opening, that the painful symptoms and constitutional disturbance should be allowed to subside; and after the cavity has contracted, and the extent of the sinus been ascertained, the operation should be performed."

It must ever be remembered that after an abscess near the rectum has been opened by a simple incision, and its contents evacuated, a cavity is left, which cavity has to be filled up; this will be best effected by the dressing being as simple as possible, and

small in quantity; nature must be in a great measure allowed, unassisted, to do her own work. By such treatment a large abscess will sometimes be cured without any necessity of meddling with the bowel; but in the majority of cases, although there may be no communication between the abscess and the intestine, still its coats are so injured that the abscess will never heal until both are laid into one. The aim of this operation is to divide the gut from the anus as high up as the top of the cavity in which the pus has been formed; for, by thus laying the cavity of the intestine and the cavity of the abscess into each other, we produce an open wound in the place of a fistulous sinus; we prevent the lodgment of matter, which is enabled to escape as soon as formed, and by frequent ablutions with tepid water and proper dressings, the patient soon recovers.

But the operation is performed on another principle, well described by Sir B. C. Brodie, whose words I shall take the liberty of quoting. "When the abscess is laid open, the fibres between it and the bowel must be divided, and the sphincter muscle being thus set at liberty, not only is there a free and ready escape for the matter, but the action of the muscle which prevents the healing of the abscess, is put an end to. This then is the mode of curing the abscess: lay it open into the bowel, dividing at the same time the fibres of the sphincter muscle which lie over it."

For this operation the probe-pointed knife, with a long and strong narrow blade, will be the instrument selected. The finger must be introduced in the bowel till the point of the knife is felt, which being taken hold of by the finger, is prevented from deviating, and the parts are thus freely laid open. If there be no opening between the abscess and the rectum, very little force will be required to make one; the knife is, in either case, received by the finger, and the operation very easily performed.

The operation over, the wound must not be crammed full of all kinds of dressings: nothing should be applied that is at all irritating. One very troublesome symptom following the operation for fistula is a diarrhœa, attended with tenesmus. I do not contend that such symptoms may not be produced by the mere division of the sinuses, but in the cases I have seen it could be traced to improper dressing; for every application not of the simplest nature, particularly if forced to the very bottom of the wound, is certain

to produce a painful irritation in the extremity of the gut; and as this irritation is almost always attended with frequent discharge of fæces, it proves not only debilitating to the system, but also tends very considerably to interrupt the completion of the cure.

The night before the operation is performed, it will be advisable to give a dose of blue pill, colocynth, and henbane, followed early in the morning by a senna draught, so that the bowels may be freely opened and the large intestines emptied of their contents; for this purpose clysters are particularly useful. As soon as the operation is performed the wound should be lightly dressed with lint covered with the ungt. cetaceum, or an ointment composed of olive oil and wax; the sores first being well cleansed with water; this completed, and a compress, secured by a T bandage, applied over the whole, the patient should be carried to bed, and a dose of liquor opii given, not so much for the purpose of allaying pain as to produce costiveness. Nor must we allow our patient much food; a little toasted bread, and a small quantity of rice pudding will be all he will require; the object being to keep the parts in a state of rest, the giving a large quantity of food therefore is worse than useless. The dressings must be removed after every stool, if these are frequent; the parts being each time well cleansed with warm water: thus treated, the sore will heal exactly as if in any other part of the body, for in spite of every effort made to induce us to suppose something peculiar or mysterious to exist in sores about the anus, the fact is undoubted that they are of the same nature, and heal in exactly the same manner as any other sore in any other part of the body. They must therefore be treated in exactly the same manner—be lightly dressed, and kept perfectly clean; care being taken to remove any fæces that may lodge in the lips of the wound, as gently and with as little force as possible. We have already remarked that by steadily persevering in this simple plan of treatment, the end in view will generally be obtained. This is not however always the case: instead of laudable pus, with fresh, red granulations, with which the wound, when healthy, will always be covered, it may acquire an unhealthy, soft, flabby appearance, the matter discharged from it being then fœtid, and in some cases highly offensive, and mixed with blood: this may arise from two causes: 1st—from some morbid condition of the system, or from some derangement of the chylopoietic func-

tions, which must at once be attended to; their healthy condition restored, the wound changes its aspect, and heals kindly. But we may not always have it in our power to remove this condition of the system which may be produced by organic disease, by some affection of the lungs or liver, and therefore we must (as before remarked) be ever careful to discover that no such disease exists before the operation is commenced: for even if we could remove the fistula, and dry up the discharge, it would not be prudent to do so, as in all probability the internal disease would advance much more rapidly.

2nd—this unhealthy condition of the parts may be induced by a sinus, perhaps situated at some distance from the verge of the anus. Upon examination, the matter is found to lodge in it; it must therefore be at once freely laid open, and instantaneous relief will in all probability be experienced.

"Sometimes," says Sir Benjamin Brodie, "in attempting to cure what seems to be a common fistula, we find that it does not get well, and in the end a copious abscess is discovered high up, which prevents the smaller ones from healing." He relates the case of a lady on whom he operated for several sinuses near the rectum, but she continued uncured for a considerable time, during which she complained of uneasy sensations, that could not be accounted for. After repeated examinations, a sinus was detected high up: not more than an inch in length, and seemingly involving the levator ani. This having been laid open, a cure soon followed. Now and then we may meet with a case where an abscess near the rectum having discharged its contents heals up; but for the most part it continues discharging more or less. The surgeon just quoted, who, perhaps, has had more experience than any other man, remembers the case of a gentleman who had suffered from an abscess near the rectum for twenty years, sometimes discharging a little, then stopping, then discharging again. Three or four months before he was consulted, the orifice closed, and did not open again as usual: after this, the patient began to suffer much pain, and became exceeding ill. The rectum was examined, and a large abscess discovered; a lancet was introduced by the side of the rectum, and it passed quite up to the handle before the matter was reached. When a little matter had escaped, a director was introduced, and about a pint of highly offensive matter es-

caped. The wound required to be again dilated, and the patient recovered.

"In all cases in which there is a communication between the cavity of the abscess and the bowel, the discharge is doubtless kept up by the escape into it of flatus and fluid fæces; a fistula may consist of one sinus, more or less narrow and extensive, running from an opening between the verge of the anus and the point of the hip towards and along the coats of the bowel—the blind external form; or there may be a communication established with the rectum somewhere above the sphincter—the complete form: more openings than one may exist in the integument, and there may be a good deal of hardness around. Several tracks may communicate with the principal one from the buttock, perineum, &c., the result either of the large original abscess, or of consecutive ones."—(Vide Liston's Operative Surgery, page 387.)

With the view, then, of favouring the contraction of the suppurating tracks, and of causing sores about the anus to become healthy, an operation is to be undertaken; and in order to remove the irritability and painful contraction of the orifice of the bowel, the surgeon must widen the outlet, and destroy for a time the action of the sphincter.

The mere steps of the operation I shall not dwell upon; they are described in every work on surgery, particularly in the valuable work of Mr. Liston, "on Operative Surgery." After the operation has been performed, it is highly advantageous to keep the parts in as quiescent a state as possible for two or three days, particular attention being paid to the simple plan of dressing already pointed out: be it also remembered, that the division of the sphincter is of the utmost importance, inasmuch as it affords that quiet to the parts which alone enables them to heal. I never, except in one case, saw any hæmorrhage arise that could not be stopped by a little bit of lint, and the continued pressure of the finger; and this arose in operating on an abscess, high up, without regarding the highly prudent advice of Sir Benjamin Brodie; "when the abscess is high up by the side of the rectum, and above the sphincter, the lancet is to be carried through the skin by the side of the anus until the matter flows; a probe-pointed bistoury must then be introduced, and the rectum divided at the lower part of the abscess, and the incision carried through the sphincter."

Like all other operations, that for fistula in ano may be followed by erysipelas; and some instances are recorded in which it has been followed by traumatic tetanus. Sir B. C. Brodie mentions a form of erysipelas not described, that I remember, by any other surgeon, in which it extends along the mucous membrane of the rectum into other parts of the intestinal canal. The pulse becomes rapid, weak, irregular, and intermitting. The abdomen tympanitic; there is great prostration of strength; and the patient expires in three or four days, sometimes sooner. In the case of a lady, the attack began when the incisions had nearly healed up, and died in forty-eight hours. I have, however, not as yet met with such a case, which doubtless is uncommon.

Manner in which the operation is performed in Paris.— M. Roux, of the Hôtel-Dieu, Paris, performs this operation in a different manner to that performed by Pott, and followed by English surgeons. He introduces a long piece of boxwood into the rectum, having its concavity towards the fistula. A silver director is then introduced along the fistulous track, and its end made to come in contact with the wooden gorget in the bowel. A long, strong, narrow sharp-pointed knife is then introduced along it, till it comes in contact with the piece of boxwood. The director is then withdrawn, and by keeping the point of the knife fixed upon the gorget, and withdrawing both together, all the parts between the fistula and the rectum are divided. This part of the operation completed, the bistoury is exchanged for a scalpel, and all the hardened base is carefully dissected out. A thick long probe is then procured, having a button at one end; this is covered with charpie, smeared over with some yellow-looking ointment, and the wound crammed full of it to the bottom.

This operation I have ever regarded as open to three objections. 1st. The boxwood gorget can only be of use in saving the finger of the surgeon, which is not very likely to be injured; and if the finger be not employed, the sense of touch cannot be available, and we are operating in the dark with nothing to guide us. Nor is it a very easy matter to introduce the point of a director at once through the opening into the rectum: this is admitted by M. Richerand, who adds, "that in this circumstance, the point of the director may be introduced into the rectum without lessening the chance of the success of the operation." 2nd. I object to the

dissecting out of the hardened integument at the edges of the fistula, which is done by two incisions crossing each other at right angles, the flaps being each lifted up with a pair of forceps, and cut out with the knife. What end is sought by this part of the operation? what object is there in view? what good can possibly result from it? what advantage attends this increase of suffering to the patient? The old surgeons supposed that there was something malignant in the hardness and callosity attending this disease, and were not content with opening the cavities, but endeavoured to dissect out the whole of the parts, and if unable to do this, they finished the work with the red-hot iron. Such practice may be worthy of a day gone by, but certainly not of the nineteenth century. 3rd. I must beg leave to enter my most earnest protest against filling the wound daily with large quantities of charpie. This plan is attended with great pain, produces considerable uneasiness, and most certainly impedes the cure. The wound cannot be dressed too lightly, and the less it is disturbed the better. But if the surgeon crams it every day with lint or charpie, the sides of the cavity cannot contract; they become hard and callous, nor is there anything in my opinion so likely to re-produce the disease as this system of filling it with dressings. Mr. Cooper, of University College, well remarks, "a sore so filled will not permit the matter to escape. A patient who has been so treated, has generally some degree of fever; has a pulse which is too hard and too quick; is thirsty; and does not get his due quantity of natural rest."

When a sore has been so treated, there is always a very considerable degree of inflammation about the verge of the anus, the lips of the wound are tumid and everted, red, and painful in a high degree, and all the lower portion of the bowel partakes of this state of things, producing frequent desire to go to stool, and considerable irritation; nor is anything more calculated to produce that fatal erysipelas before described than this mis-management of the wound. If we were called upon to treat such a case, the first thing would be to remove the dressings and to foment the wound with warm water. At the same time attention must be paid to the state of the system, and treatment directed to calm any general disturbance that may have arisen, made use of.

M. Roux, whose talents and great experience entitle any opinions

he may express to the greatest possible attention and respect, in a critique published some years ago, upon the manner of performing this operation in England, censures our plan of not filling the wound with charpie; but, says Sir B. C. Brodie, "it is chiefly in consequence of the use of too much lint in dressing that further operations are so frequently required before the cure is completed;" this opinion also coincides with the experience of Mr. Liston, who strongly reprobates the plan of filling the wound with lint or charpie.

THE OPERATION BY LIGATURE.

The mode of removing this disease (already pointed out) by a simple incision, which prevents the lodgment of pus and faeces, by throwing the fistulous track and the rectum into one cavity, is the plan almost universally adopted in England. There are, however, some persons who have such an unconquerable aversion to the knife, that we are under the necessity of yielding to their wishes, and employing a ligature. I have operated many times for fistula, and always with the knife, which inflicts very little pain in comparison with the ligature. The silk in fact effects exactly the same thing as the knife, and by a very slow and painful process, divides the parts between the fistula and rectum; not, without, in many instances, giving rise to severe and dangerous inflammation. This is the plan resorted to by advertising quacks—these would be humanity-mongers, who delude their unfortunate victims into the idea that "*the fistula can be cured by a painless and bloodless operation*," when in truth a simple incision with a knife effects in twenty seconds, with little pain (a hundred times less than that occasioned by the extraction of a tooth), that which it takes four or five weeks to accomplish by a ligature of silk or lead wire, which must daily be drawn tighter and tighter, lint or linen compresses being employed to prevent the opposite side of the anus from being chafed.

There are cases, however, in which ligatures must be employed, where they must be substituted for the far less painful, and much more speedy operation with the knife. I allude to patients in whom no operation can be performed without danger from severe

hæmorrhage. Sir B. C. Brodie relates a case, where death, from this cause, followed the extraction of a tooth: Mr. Lane nearly lost a patient from continued bleeding after the simple operation for squinting—and I knew the member of a hæmorrhagic family who died in consequence of a cut on the finger. In similar cases, or when the internal orifice of the fistula is situated a long way up the rectum, or when the hæmorrhoidal vessels are unusually large, the operation by ligature is to be preferred. The manner of performing it is very simple: a needle-probe of flexible silver is passed along the fistula into the rectum, carrying with it a lead wire or piece of strong silk; the end is then drawn out through the anus, and tied upon a small linen cylinder, or the ends of the lead wire are twisted on each other. Care must be taken to prevent the ligature from chafing the opposite sides of the anus. In a few days the surgeon begins to draw the ends tighter and tighter, and in this way, in the space of three or four weeks the ligature makes its way through all the parts it has embraced. If the ligature becomes rotten before the parts are sufficiently divided it must be removed by tying another piece of silk to one of its ends, and then drawing it through the fistula in the same way as the cord of a seton; this done the ligature is tightened as before.

Compression has also been employed of late in cases of anal fistula, and M. Bermond has invented a very curious instrument for this purpose. Experience has not yet pronounced on the value of the plan.

I have thus endeavoured to group together the most important and interesting facts connected with the causes and treatment of fistula in ano; the study of this disease is of considerable interest and highly important, from the frequency with which it occurs, and it would be well for such as are yet students, carefully to examine every case of fistula they may meet with in the wards of the hospital, and to attend the *post mortem* examination of such patients as may die from other diseases, but who may have fistula also. We are all of us too apt to neglect, when students, "those simple cases," as we term them, forgetting that, in the majority of patients, such "*simple cases*" are those we shall be called upon to treat. On the successful treatment of such "*simple cases*," the foundation for future fame is laid; and wise is that man who not only attends, when at the hospital, to cases of hernia and stone,

and the operations for them, but who also devotes some portion of his time to the study of the treatment of simple wounds and ulcerated legs. Nor will any class of cases he can select be more worthy his most careful attention, than diseases of the lower bowel; for when in practice, no disease will more frequently require the exercise of his professional skill than fistula in ano.

CHAPTER III.

CASES OF COMPOUND FRACTURE OF THE CRANIUM WITH DEPRESSION.

Case xiv.—George Ridley, assistant groom in the stable of Earl Spencer, in removing some dung from one of the horses was kicked upon the head. I saw the poor fellow shortly after the injury had been sustained. There was a small wound upon the side of the head about the size of a shilling, from which there was a considerable flow of blood. It was evident the wound had been made by the heel of the shoe, which, upon examination, was found to be raised (what the blacksmith terms "turned up"). This portion of iron had been driven through the scalp with sufficient force to fracture the frontal and parietal bones on the right side of the head, and on introducing the finger the depressed portion of bone could be very easily detected. The man was a little stupid, and complained of being sick; the pulse was weak; the hands and feet cold. The wound was very carefully brought together with adhesive plaster, and supported by a bandage; the hair was removed from the head, and the man sent to his bed. Two hours after the accident I saw him again: pain in the head; skin hot and dry; pupils slightly dilated; has been very sick; pulse 100.

V. S. ʒviij. Cold water to the head. Two grains of Calomel every six hours.

7th.—Slight pain in the head; skin hot and dry. Saline aperients; cold water to the head. The bowels have been freely opened.

Vespere.—Still complains of pain; pulse 120.

℞ Pulv. Scam. gr. iv; Hydrarg. Chloridi, gr. iii. hac nocte. V. S. ʒx.

To take nothing but a little tea and toast-water, which has been his only food since the accident. Ice to the head.

8th.—Pupils more dilated; more pain in the head; intolerance of light: pulse 120, hard and full.

V. S. ʒxvj. Saline aperients with antimony.

Evening.—Blood drawn away a good deal "buffed;" says he is much relieved by bleeding; bowels freely opened. Continue the saline mixture with emetic tartar. Two grains of calomel at bed-time.

9th.—Less pain in the head; wound looks healthy; slight puffiness of the scalp, into which a lancet was plunged; pupils still dilated. To have a little mutton broth.

10th.—Pain in the right ear; puffiness of the integuments entirely removed; mouth slightly affected by the calomel; pulse 100, full, and rather hard.

V. S. ʒxii. A blister to the back of the head; to be dressed with mercurial ointment.

11th.—Much better; blood taken yesterday buffed; pulse 90; skin moist.

℞ Liq. Ammon. Acet., ʒij; Spir. Æth. Nit., ʒss; Aq. Menth. Vir., ʒx. sexta quaque hora. Pulv. Jacobi, gr. iv; Hydrarg. c. Creta, gr. vi. hac nocte.

12th.—Still improving; has now little pain in the part, and appears anxious to leave his bed. He was, however, still confined to his room, the bowels kept well open, and his diet mutton broth and tea. He gradually recovered under this treatment, and is now as well as before the accident.

Case xv.—[For the particulars of this case I am indebted to my old friend Mr. Lane, the Lecturer on Anatomy.] A little boy of the name of Lee, between four and five years of age, was playing in a stable yard, when the shafts of a phæton fell upon his head, and the iron projection on the under surface of the shaft for the purpose of fixing the harness made an indentation into the child's head, into which you might place the end of your finger. The scalp was divided, and the bone depressed to the depth of quarter of an inch. The little fellow was stunned for a short period only,

vomited, and in a few hours appeared in his ordinary state of health. Nothing worthy of mention was done for the child; symptoms were watched for, but none appeared; a piece of bone larger than a sixpence exfoliated, and after the wound healed a considerable depression remained.

CASE XVI.—A man employed in building some houses was standing under a ladder, when a piece of iron, the end of which was about the size of a shilling, fell upon his head, passing through the integuments, and beating in a portion of the skull. The man said, "That nothing was the matter with him, that he felt stunned for the moment, but was then quite well, and that if his wound was *done up* he could go to work again." This opinion was overruled, and it was decided that the trephine should be used, for the purpose of raising the depressed portion of the bone. The man said nothing, not knowing what a trephine was, but when it was brought, declared "he would take very good care that no one should make a hole into his head." The wound was carefully closed, the man sent to his bed, and largely bled: symptoms were looked for, but none arose, and in a short time he was quite well.

CASE XVII.—Mr. P——, at the age of 16, whilst riding down a steep hill, was thrown off his horse, and fell with very great violence on his head. When taken up he was quite insensible, and a severe wound of the head was found to have been received. The surgeons called in, on examining the injury, found that the scalp had been divided over the right parietal eminence, and the bone below fractured with considerable depression. According to the admitted principles of surgery in those days, the scalp was divided on either side of the wound, and the fracture traced out to its ultimate terminations with scrupulous and laboured care. What was to be done? Compound fracture of the skull, with depression and symptoms of pressure upon the brain. The trephine must be used, and preparations were accordingly made for performing the operation, which, however, was suddenly put a stop to by the gentleman recovering his senses, and by the removal of all symptoms of concussion and compression. The question now arose whether it was safe to allow the case to go on without elevating the depressed portion of bone: this part of the business was, however, decided by the patient, who declared that no operation should be performed: he was, therefore, removed home, and the wound

allowed to heal, and notwithstanding the additional scalping of the surgeon, it did so without any untoward symptom. Forty years have now rolled away since the accident: the gentleman is still alive, with a depression of the right parietal bone, of about a quarter of an inch deep, and an inch and a half long: he has never suffered any pain or inconvenience from it, is the father of a numerous healthy family, one of them in good practice as a surgeon, and to him I have to return my thanks for the outline of this truly interesting case.

Case xviii.—A man was brought into the hospital in Paris, under the care of M. Roux. He had received a blow upon the head, wounding the scalp, and fracturing the frontal bone, which was considerably depressed. He was quite insensible for some time, but recovered sufficiently to walk to the hospital: he complained of pain in the head, which he wished to have dressed, in order that he might return to his employment. He was however, advised to remain in the Hôtel Dieu, which he did for three weeks. He was only bled once, and kept upon a very low diet. The man never had a bad symptom, and perfectly recovered.

Case xix.—A little boy was admitted into the Hospital of University College, London, under the care of Mr. S. Cooper, for an injury of the head received five weeks before. There was a fracture with considerable depression, and a wound leading down to it. The seat of injury was the frontal bone, the accident being occasioned by a blow from the handle of a pump. As the lad was sensible, he was only bled and purged, a cold lotion applied to the head, and an antiphlogistic diet strictly enjoined. No serious indisposition came on, and the lad soon got well, although a considerable depression remained; and, adds Mr. Cooper, "I have seen many cases of depressed bone with a wound of the scalp do well without the use of the trephine."

Case xx.—Master W., a little boy, æt. 10, in passing through the streets of Kensington, near some men playing at quoits, received a blow upon the left temple from one of the quoits, which struck him with considerable force. He was carried home senseless. When I saw him, about half an hour after the infliction of the injury, he was cold and shivering and complained of sickness. Shortly afterwards the contents of the stomach were ejected, and the vomiting continued during the night. There was a large open

wound of the scalp, about two inches in length; and on removing the coagulated blood, a fracture with depression could easily be distinguished. The boy described the pain in the head as considerable. The wound in the integuments being carefully brought together, he was put to bed, and cold water ordered to be applied constantly to the part.

℞ Hydrarg. Chloridi, gr. iv. hac nocte.

18th, 8 A.M.—Has passed a very restless night; complains of great thirst; constant sickness; pain in the head; skin hot; tongue dry and coated; pulse 120.

Apply ice to the head. V.S. ad. ʒviij.

℞ Sodæ Sesquicarb. ℈j.; Syr. Aurantii, ʒj.; Aquæ ʒx. M. ft. haustus c. coch. med. succi limonis quaque 3tia hora sumendus.

Vespere.—Sickness less constant than in the morning.

Four grains of calomel at bed time.

19th.—No change.

20th.—Complains of pain in the head: skin hot and dry; has been restless, talked in his sleep, and is constantly asking for something to drink. Bowels open; tongue white and coated.

Continue the ice to the head. To take an aperient every four hours.

21st.—The tongue still continues white and coated; pulse slow and laboured; complains of pain in the head; skin hot and dry; bowels open.

Continue the aperient mixture, and ice to the head.

22nd.—More pain in the head.

V.S. ʒvj.

The wound which has been closed with adhesive plaster, looks puffy round the edges; there is also considerable tenderness of the scalp, and great intolerance of light. A few punctures were made with a lancet, and a poultice was applied over the seat of injury.

23rd.—Skin still hot and dry; tongue coated: pulse 100.

Apply six leeches over the part originally injured; to take six grains of calomel at bed-time, and a draught, composed of senna, sulphate of magnesia, and infusion of gentian in the morning.

24th.—Much better. The boy from this day continued to improve, and is at this moment as well as before the accident.

I have seldom seen a more severe injury than this. The fracture extended from the edge of the frontal to the squamous portion of the temporal, and thence to the left parietal bone. The wound in the integuments was two inches in length, the

scalp much bruised, and the periosteum in several parts torn from the cranium. The depressed portion of bone was at least one inch and a half in length, and driven down below the level of the cranium more than the eighth of an inch. So apparent was it, that a woman who was standing by remarked "that his head was driven in." The treatment, as above stated, consisted in cleansing the scalp, and carefully closing the wound with sticking-plaster, and applying very slight pressure with a bandage; also ice and evaporating lotions. It is necessary to be very careful in closing the wound. Every particle of air should be excluded, and every means employed to cause the parts to heal, if possible, by the first intention. In this case the boy was not bled the first day, because he had lost much blood from a branch of the temporal artery, which was divided by the accident, and my friend Mr. Carrick thought with me that a sufficient quantity of blood had been lost.

Case xxi.—A girl about fourteen years of age, had a fracture, with depression of part of the temporal and parietal bones. The girl was kept quiet; bled, placed in bed, cold applied to the head, and aperients administered. She got well without any bad symptoms.

Case xxii.—A Frenchman, æt. 51, was brought to the Hôtel Dieu, having received a blow upon the frontal bone, which was fractured. The scalp was much bruised; the skin around the wound puffy and discoloured, and the wound in the integuments ragged, as though the injury had been inflicted by the rough edge of a brick-bat. I could not, however, learn how the injury was sustained. He complained of soreness in the wounded scalp, which was "*all he cared for.*" He was bled, much against his inclination, and kept upon a low diet; an aperient being given every morning. When I left Paris the wound had healed; and I have no doubt in a day or two the man would be sufficiently recovered to leave the hospital.

Case xxiii.—This case will shew the necessity of strict attention to diet after injuries of this nature. Every thing tending in any way to derange the system must, for months after fractures of the bones of the head, be avoided, or the most fatal results may take place.

Mary Burton, a little girl, æt. 13, the daughter of a small farmer, fell down in her father's yard upon the edge of a stone

trough, out of which the cattle were supplied with water. The integuments over the right temporal bone were wounded; and on introducing the finger, a fracture, with some degree of depression was detected. My friend, under whose care she was placed, adopted the plan of treatment already recommended, and in a few weeks she had apparently completely recovered, with the exception of some little tenderness of the scalp. At this period (about five or six weeks after the infliction of the injury), in company with some young friends, she partook of a quantity of unripe fruit, sweet-cake, and "made wine." Two days after this she was seized with rigors, followed by great pain in the head; the scalp over the original seat of injury being so tender that the slightest examination caused considerable pain. At this period I was called to attend in consultation with the family surgeon. After a very careful examination of the bone under that portion of the scalp where the skull had been fractured, we could discover nothing that induced us to suppose that the symptoms present altogether depended upon the local affection, and therefore our attention was directed to the system generally. The bowels were distended, the skin hot and dry, the tongue furred, and the slightest noise appeared to cause an increase of pain. She dozed a good deal, remaining in a half comatose state; now and then asking for water. Six leeches were applied to the temples, and six grains of calomel and four of rhubarb given immediately, followed by a draught of infusion of senna and manna. This plan of treatment was continued until the bowels were thoroughly emptied of a quantity of undigested food, mixed with dark fœtid fæces. Under these remedies a manifest improvement took place. The only local treatment, in addition to the leeches, was an evaporating lotion, which was constantly applied to the head. The little patient gradually recovered. When the bowels were unloaded, the tenderness vanished not only from the epigastric region, but also from the head. The skin, however, remained yellow, the hands moist, and the system was evidently still suffering. Some hydrarg. c. cretâ, and rhubarb, at bed-time, with the infusion of chirayta and soda during the day; exercise, and a strict attention to diet, gradually worked a change, and we had the pleasure of seeing our little patient quite restored to health.

I have not recorded the above cases from any supposed novelty

they may possess; on the contrary, the student in any of our London hospitals may probably witness similar accidents every week, and he will not be long in practice before he is called to injuries of this nature. No class of cases are more important: first, from the frequency with which they occur; and secondly, from the fatal results with which they are too often attended. But are such cases to be disregarded because they are common? Not at all. I am well aware that students run to see the *great operations*, and read all the *curious cases* in the medical publications of the day. *Cui bono?* Let me here repeat the remark of one of the most distinguished surgeons of the present day, Sir B. C. Brodie. When I began my professional studies I became a pupil under this surgeon at St. George's Hospital. Before doing so I called upon him, having a letter of introduction from a friend. "Let me advise you, sir, (said he) to attend regularly at the hospital. Never mind cases of hernia and stone, at first, but look at the *cut fingers*, *ulcerated legs*, and *broken heads;* they are of the most importance; you will be called in early life to attend them, and they are the foundation on which to build your future reputation."

Looking at cases of fractured bones of the head, and carefully watching the treatment of them, I soon found that *many cases died* in which the trephine was applied, and that *many recovered* in which this operation was not performed. It therefore was necessary, in the next place, to enquire if we are justified in performing this operation in the absence of symptoms denoting pressure upon the brain. The result of an experience of some years induces me now to conclude, that in the great majority of cases of compound fracture of the skull with depression, we ought not to trephine unless it appears clear that the brain is suffering from pressure. Here, of course, the operation ought at once to be performed. In all cases, for example, where the injury is extensive, the wound in the integuments large, and the bone broken into several pieces, even in the absence of symptoms, some interference may be necessary; some of the pieces may be picked from the brain, and others elevated, the several splinters sticking in the dura mater removed, and this without additional injury to the scalp.

Case xxiv.—James Betts, æt. 10, was endeavouring, during

the month of July, 1841, to get upon a cart belonging to Earl Spencer. He fell with his head between the cart and the wheel, and was drawn onwards some distance, his head acting as a wedge, and causing the wheel to be locked for some yards. The bone was not fractured, but the parts were bruised and discoloured. I saw him shortly after the accident, and although every care was taken, a rather sharp attack of fever came on. In truth the symptoms were much more severe than in some of the cases of compound fracture already mentioned.

If, then, injury done to the scalp and bone, although there is no fracture, produces, not unfrequently, exfoliation of the bone, inflammation of the brain, effusion between the arachnoidea and dura mater, abscess, &c., it does appear that the operation of trephining is more likely to produce, than to prevent, inflammation of the brain; and all the inflammatory symptoms which are expected to succeed to all violent blows on the head are doubtless aggravated by the additional injury inflicted by the operation: to say nothing of the danger of the operation itself. As my friend Mr. Lane, the lecturer on anatomy, well remarks, "if you were to trephine twenty men, in a state of health, how many would survive the operation? I apprehend not many."

The above cases, in addition to numerous others that have been published, prove that many persons recover after their skulls have been fractured, and a portion of bone driven upon the brain. The degree of pressure the brain can sustain doubtless varies in different individuals; for in some, slight pressure produces great inconvenience; in others, the greatest depression is observed to cause little or no uneasiness. It will be well also, in every case, carefully to distinguish between the symptoms arising from concussion and compression. And this may easily be done, if some little time is given in order to recover from the stupefaction a severe blow is almost certain to produce. Now, as the effects of concussion gradually abate, a very little delay will, in every case, enable the surgeon correctly to ascertain the precise nature of the mischief and to act accordingly.

Where the patient retains his faculties, nothing is necessary except to carefully close the wound, keeping the head cool. Rest, confinement to bed, purgatives, bleeding, and a very strict adherence to the antiphlogistic plan, will of course be required. If,

however, the torpor continues, the patient must not be allowed to die without an effort to save him. The trephine must be used, and the bone raised.

It appears clear that the ancients trephined much too frequently; while some, in the present day, witnessing the fatal results attending this operation, too generally condemn the practice. The above cases, however, clearly show that it would have been useless to have trephined in them, and that the brain will bear a considerable degree of depression without injury. The cases mentioned by Abernethy, Bell, Lawrence, Hill, Latta, and others prove this opinion to be correct.

In all cases of injury of the head, it will be very important to inquire whether the patient has remained insensible from the first infliction of the injury. If he has done this we have in the first instance every reason to hope that the symptoms are the result of concussion. In the case of the little boy Lee, (Case 15) though stunned by the blow, the brain gradually recovered its proper functions. Mr. P——— (Case 17) remained insensible for a considerable time, until the side of his head was half scalped by the surgeon, and yet he awoke in time to prevent the operation, and remains alive to the present day. The shock the brain has received by the concussion will continue to diminish, and after a time cease altogether, for if the force applied, when the blow is received, be not sufficient to produce alarming symptoms, it will not do so afterwards, for it is not reasonable to suppose that a cause insufficient to produce them in the first instance will do so when its power is considerably diminished. If, immediately after the infliction of the injury the man gets up and walks away, it is clear that the brain has not suffered from concussion; still the patient requires to be well watched, for in an hour he may become drowsy, perhaps insensible, and then the case must be regarded as one of compression. This cannot, however, be of use on all occasions, for we may have concussion and compression combined. Still the rule is a good one, and ought never to be lost sight of.

In many cases of concussion of the brain, I have seen much injury produced by the abstraction of large quantities of blood. A man falls from the top of a house: he is taken up insensible, with cold hands and feet, and a feeble pulse. The pulse rises a little, and some blood is immediately taken away. It rises again, be-

comes a little fuller, and some more blood is added to the first, and this is again and again repeated, and in time the pulse becomes weaker, and the patient sinks and never recovers. I am aware that the opinion now expressed differs from that of many surgeons, and yet repeated observations have induced me to conclude that concussion of the brain acts upon the general system in nearly the same manner as syncope arising from irritation, fever, grief, or any other cause, and in the treatment of which blood-letting is known to be injurious. Again, many lives have been saved by active bleeding, the *juste milieu* cannot be defined, and I only make the remark to show that great discrimination is required.

"Immediate dissolution, like syncope, probably depends upon an affection of the brain, induced by great loss of blood, or the loss of even a very small quantity in a constitution enfeebled by disease." Now if the opinion of Dr. Marshall Hall be correct (of which there can be no doubt) it will appear very clear that the abstraction of even a very small quantity of blood, when the functions of the brain are as it were suspended, and its energies considerably weakened, is likely to be productive of the most serious consequences.

We are at a loss to account for the way in which a person five minutes before in the possession of health, and capable of supporting the evacuation of a large quantity of blood, becomes by a blow upon the head, which does not fracture the bone, unable to bear the loss of a wineglass-full, yet, nevertheless, attentive observation has convinced us of the fact, and all who take the trouble to read this page of nature's book will come to the same conclusion. Be it, however, remembered that although we may have a very correct knowledge of the structure of the brain and of its several parts, yet it must also be confessed that we have much to learn before we can state the exact manner in which its several functions are performed.

In some cases of concussion, I am induced to think with Sir B. Brodie that death is produced by some alteration in the action of the heart. When the blow is very violent, the patient at first lies motionless, "*was* taken up for dead," says the witness before the coroner; the respiration was all but annihilated, the hands became very cold, and the pulse was irregular and intermittent. The witness then goes on to tell us, that a surgeon was sent for, who at

once opened a vein, but not more than a teacup-full of blood could be got, and the man died immediately—verdict, *accidental death;* nor does a month, a week pass without some newspaper containing a similar paragraph, assuring us that every thing had been done, and yet, that very teacup-full of blood held the balance of the scales in favour of life, its loss occasioned *inevitable death.* In some cases even without bleeding, even after re-action has come on, nature appears unequal to the effort; and life, like the flame of an expiring candle, blazes brightly for a moment, and then expires. There is another practice equally common, and equally deserving censure: I allude to giving brandy and water immediately after injuries of the head. I think the moment after concussion, when all the powers of life are depressed, that stimulants can never be employed with advantage, and when slight re-action comes on, the practice becomes much more pernicious and indefensible. The fact that the brain is sufficiently recovered to carry on the animal functions proves that the administration of wine and brandy is not required, and the making an unfortunate fellow-creature drink when in this condition, appears very likely to destroy life, even if he is not killed in the act of swallowing. Again, the same blow which produced concussion of the brain frequently ruptures some small vessel in the cranium; now, that condition of the system on which the feeble action of the heart depends, is calculated to prevent the bleeding of the ruptured vessel, and the longer it continues the less will be the danger. At first little can be done, the state of the pulse and circulation is to be carefully watched, and the surgeon must take away blood in sufficient quantity to prevent that immoderate frequency and hardness which the pulse has, in these instances, a tendency to assume, soon after the first shock of the accident begins to abate. The system of bleeding and giving brandy and water after injuries of the head, while the patient is in a state of insensibility, is far too common, and the sooner an extinguisher is put upon this practice the better. We are all of us at times called far from home, and all liable to severe injuries of the head. If I am ever insensible from this cause, I beg to take the opportunity of entering my *protest* against the plan of pouring brandy and water down my throat by which I may be choked, and of bleeding me the moment a pulsation can be felt at the wrist, by which all chance of recovery is apt to be taken away.

Case xxv.—R. T., this man was knocked down by the Dart coach, in the streets of Kensington. When called to attend him, I found his arm bound up, and a chymist about to open a vein. The man was cold; his lips bloodless: nor could either the pulse at the wrist or the beating of the heart be felt. He was put into a warm bed; the head shaved, and covered with cloths dipped in cold water. It was twenty-four hours before he spoke at all, and many days ere we could get him to do more than answer "yes" or "no," or "leave me alone." It was three days before it was thought necessary to take away any blood. Eight ounces abstracted relieved a fixed pain in the head, and the man perfectly recovered.*

The question now more particularly before us is, ought the trephine to be used in all cases of compound fracture of the cranium, in the absence of symptoms indicative of pressure upon the brain?

It is, no doubt, a matter for serious thought, a subject in which no man would venture to give an opinion, without first devoting to it the most attentive consideration. If the bone could be raised without additional injury to the soft parts—if the portion of skull could be lifted from the brain without violence, without opening the cavity of the cranium, and exposing the brain and its membranes to additional injury—then we should have no doubt upon the matter: but can we do so? Experience answers, no. If, however, after waiting a reasonable time, the symptoms of compression remain, the patient must not be left to die. We have numerous cases on record in which the operation has succeeded in snatching individuals from the jaws of death; perhaps the most interesting is that related by Mr. S. Cooper, of a man belonging to the 11th regiment, who was struck by a musket-ball on the right parietal bone, which had been exposed, but without any appearance of fracture. The poor fellow being all but dead, the trephine was applied; the external table came away, showing the internal table driven into the brain: this was removed; the man at once got up, dressed himself, and perfectly regained his health, without a single bad symptom. But in the absence of symptoms denoting pressure upon the brain, are we justified in leaving the case without the performance of this operation? The cases al-

* This case was seen with my friend Mr. Pollock.

ready quoted, the numerous ones on record, prove that the brain may bear a slight degree of pressure without injury. "But you do not trephine for symptoms that are present; you do so to prevent others which may possibly arise." If, however, the brain accommodates itself to the pressure in the first instance, we are at a loss to conceive why it will not continue to do so; if it performs its proper functions soon after the infliction of the injury, neither reason nor experience teaches that it will not do so throughout the patient's life, as in Case 14, Case 17, and the cases related by Mr. Abernethy and others; and it is notorious that the experienced Desault, in the last years of his practice, abandoned the operation altogether, owing to the dreadful fatality which attended it in the Hôtel Dieu; and even now, both in France and England, the opinion of its most strenous supporters begins to wave.

Mr. Liston, in his work on Operative Surgery, remarks that the upper part of the brain often bears from the first a great deal of pressure with impunity, or it becomes accustomed to it, or the symptoms abate, the patient recovering, with a great portion of the bone completely under its natural level. He, however, contends that the use of the trephine is necessary in punctured fractures:—"the presence of the numerous sharp spiculæ from the internal table, for even a short period, is frequently followed by intense inflammatory action, propagated to the brain and its more immediate investments. At all events, even if he escape this danger, he is apt to suffer at a later period from abscess under the bone, occasioned and kept up by the dead portions." This opinion, coming as it does from this experienced surgeon, demands our most serious examination. The case of Ridley; the boy Lee; that of the man struck with the iron bar; the case of the woman struck by a brass candlestick, and the boy kicked by a horse in Smithfield (the two latter related by Mr. Abernethy), would almost cause us to pause ere we resorted to the operation, even in punctured fracture. Is it too late to have recourse to it at a later period, when we have symptoms proving such injury to exist?

On the proper time for trephining great diversity of opinions exists. Mr. Guthrie thinks there is less danger on the first day; Sir P. Crampton and Mr. Colles, that the operation on the first day only increases the irritation of the already severely injured parts. If the operation is to be performed, I think the sooner it is done the better.

The case of the nephew of Lord Brougham, related by Mr. Crampton, bears upon this point, and proves that even fragments may be driven into the substance of the brain, without their immediate abstraction being required or warranted, although we should endeavour to remove them as a general rule; nevertheless it will be sure to have exceptions. In the case just mentioned, the moment Mr. Crampton touched a large portion of bone with the intention of removing it (for the fragment was buried in the brain), the body became convulsed, and the patient moaned deeply; all further efforts were desisted from—the case was left to nature—strict antiphlogistic measures resorted to, and at the end of twenty-two days the small pieces of bone were discharged by the process of nature. And what says the experience of an old army-surgeon—of Mr. S. Cooper? "If the depressed portion of bone be denuded by a wound of the scalp, a trial to raise it with the elevator may sometimes be proper, even though urgent symptoms of pressure do not exist; in such cases Sir A. Cooper sanctions the use of the trephine; yet my own experience and reflections would induce me to abstain from the operation."

Case xxvi.—Since the above portion of this chapter was written, in looking over an old note book, I find the case of a man attended by me about eight years ago. In that colony of Irish, Kensington Buildings, a policeman informed me that a fight had taken place, and on following him to the spot, we found a poor fellow upon the ground senseless. Upon cleansing his head from the mass of clotted hair and blood which was upon it, three very severe wounds were discovered. The scalp was much injured, owing to the wretch who inflicted the injury having first beaten his victim with a stone, and then jumped on him with his nailed boots. One of the wounds extended from the temporal to the parietal bones, and on introducing the finger, a fracture with very considerable depression presented itself. While debating what should be done, the man began to turn in his bed, was sick, and shortly after spoke, asking "if they had got Black Ned," which it appeared was the name of the man who had injured him. He was bled, the bowels well opened, and a poultice applied to the head, for it was vain to attempt to heal the wound by the first intention; yet, notwithstanding the depression of the bone, the age of the patient (forty-six), the contusion of the integuments, and a constitution

enfeebled by want of food and intemperance, the man recovered without a bad symptom.

It appears then that we have before us a sufficient number of facts to warrant the conclusion that, in numerous cases in which the skull has been fractured, and the bone driven down upon the brain, no inconvenience has been experienced by the patient. That some degree of pressure can be sustained by the brain is clear in the first instance from the absence of pain or headache immediately after the injury; that such inconvenience does not arise long afterwards is obvious by an examination of numerous cases; that of Mr. P———, (Case 17) is confirmatory of the fact, as are also the cases related by Mr. Abernethy and Mr. Hill.*

It is granted that severe indisposition frequently continues before the patient returns to a state of health—that after severe fracture, with depression, the issue is often doubtful, and the scale poised equi-distant between life and death; but while this is admitted, we must admit also, that these symptoms are often present in cases in which the bone has been elevated, and in cases where you have no fracture, but simply a wound in the integuments. Had the trephine been used in the case of the groom of Earl Spencer the man might have got well; no bad symptoms might have arisen had the same antiphlogistic treatment been resorted to, and had the result been the same, the advocate for the trephine would have quoted it as an instance of the necessity of elevating the bone in all cases, to prevent symptoms which were kept down by the lancet and purgatives, without running the risk of exposing the brain.

We are, therefore, justified in coming to the conclusion that the brain can bear considerable pressure without injury; nor can we see what arguments can be brought to bear against the opinion of Abernethy, "that the brain accommodates itself to the pressure, and that which can be sustained at first is not likely to be productive of injury at some future period." Even, if in cases of fracture the internal table is supposed to be starred,—fragments to be driven upon the brain, I think we are not justified in per-

* There is one symptom as yet unnoticed, and a very serious one it is, I allude to a watery discharge from the ear, which in all probability comes from the sac of the arachnoid membrane, and is indicative of great danger. In such cases the direction of the fracture is towards the body of the sphenoid, and over the petrous portion of the temporal bone.

forming the operation in the absence of symptoms denoting such a state of things to be present. Mr. Birch relates the case of a negro, who received a blow upon his head, fracturing the skull. Shortly afterwards he was seized with epileptic fits, which continued for many years. He was admitted into the hospital, and a portion of the bone found still depressed. It was removed with a trephine with considerable difficulty, owing to a little spicula of bone which had entered the dura mater, and penetrated the brain. The man perfectly recovered.

If the operation were in itself unattended with danger, that would be an unanswerable argument for its employment in all cases of compound fracture with depression: but this unfortunately is not the case.

We come not then to this conviction without a due examination of the subject; but with numerous facts before us we can come to no other conclusion—we can lay down no other rule than this, viz. That the trephine ought not to be used, even in cases of compound fracture of the bones of the head with depression, without symptoms denoting pressure upon the brain.

Doctor Reese, of America, informs us "that in the United States the trephine is now much more seldom used than formerly:" in France and England it is daily growing into disuse: it is an operation not to be performed without the most urgent necessity—"gravis tamen satis est operatio, ut nunquam nisi indicationes adsint institui debet."

[Since the above remarks were written and published, three or four years ago, in the London Medical Gazette, much practical information has been supplied on this interesting class of injuries, and the opinions of most surgeons have changed with respect to the operation of trephining—and if I mistake not the opinion of the great majority, is the same as that expressed by the very able writer of the Medico Chirurgical Review, who in his review of Mr. Guthrie's work remarks, "in a case of compound fracture of the cranium with depression but without symptoms we fancy we should pause before we used the knife."

On turning to Mr. Guthrie's very valuable work, I find he has expressed the same opinion, and in nearly the same words as myself three years ago. I then said—"*if the operation by the trephine was in itself unattended with danger, that would be an unanswerable argument for its employment, in all cases of compound fracture with depression, but this unfortunately is not the case. If you were to trephine twenty men in a state of health how many would survive the operation?*" Mr. Guthrie now says, page 105—"*If the*

operation by the trephine, or that of sawing a piece of bone out of the head, *was not in itself dangerous* there could be *no hesitation about its use*, but it is a dangerous operation." I am happy to have my views thus strongly confirmed by such valuable authority. I have perhaps not sufficiently pointed out the advantages of calomel after injuries of the head. It is fashionable to combine it with opium. I have a very great objection to its administration, and think under any circumstances that opium is a dangerous remedy. After inflammation of the brain and its membranes has continued for some time, a blister applied to the scalp, and afterwards dressed with the ungt. hydrarg. often affords considerable relief. The remedy of course must only be made use of after bleeding and the internal administration of calomel. In cases of mania subsequent to injuries of the head, opium in some form—more particularly *morphia*, is occasionally given and we are told with great success; I am still inclined to think this, at best, a very questionable remedy, and I advise the the student to pause ere he employs it in practice. Mr. Guthrie has done good service in setting at rest that favourite crotchet with some surgeons, that the inner table is often broken without fracture of the outer one, he says, "he has never known the inner table to be separated from the outer, without positive marks of an injury having been inflicted on the bone or pericranium."

The last case of severe injury of the head under my care was in December last. The patient, Henry Barker, æt. 45, an engineer residing at Everton, was drawn into the machinery, his head wedged between two pieces of iron, one of which entered the back part of the head, completely tearing the scalp from the bone, for more than four inches; there was a fracture more than two inches square with considerable depression,—that portion of the occipital bone, appearing quite driven in by the iron. The man was dull and stupid, but I learnt from my brother, who had seen him from the first, that he was more sensible than he was half an hour before, and that he seemed gradually coming to himself. He was cold, and covered with a damp sweat, no pulse at the wrist. The wound was carefully washed, brought together with adhesive plaster, and the man put to bed. In the evening he complained of much pain in the neck and scalp, which was bruised and discoloured. Thirty leeches were applied, the head shaved and kept cool by ice, a dose of calomel given followed by a purgative. The next day twenty ounces of blood were taken, the next day he was bled again, and two days afterwards, a further abstraction of blood was required to check the inflammation which had evidently set in. The quantity of blood this man lost was enormous, but I apprehend he owed his life to this treatment. Barker was a strong, healthy, and very powerful man, in the prime of life, and remarkably temperate in his habits. He has now perfectly recovered, although a large portion of the bone remains depressed. In such cases we must consider the effects rather than the quantity of blood taken, and bleeding affords the only chance of saving life; for my own part I look upon it as the sheet-anchor of our practice, and I should indeed be sorry to trust solely to the application of a blister, or a dose of calomel and colocynth. But there are limits to the

employment of the lancet; rules for the proper abstraction of blood, however, cannot be precisely laid down so as to suit every case without exception, still the general rule is a good one which directs a small quantity of blood to be taken in the first instance, and the quantity increased as urgent symptoms arise. I have already said that there is danger in taking too much blood as well as in taking too little, the condition of the patient and the state of the pulse will be the guides of the surgeon, he must form his own opinion and act accordingly. It is an undoubted fact, that the majority of favourable cases of compound fracture of the cranium with depression, not trephined, are children and young persons, and this arises from the inner table not breaking so soon as in the adult; the brain also sustains pressure better and the level of the bone is gradually restored. It may perhaps be argued, that my objections to the use of the trephine, have been carried a little too far; I can only add that the conviction has been forced upon me by the result of a great number of cases that have been witnessed in the hospitals of London and the Continent, and attended in private practice; at any rate if an error be committed it is on the safe side, for I am satisfied that so dangerous an operation ought never to be performed without the most urgent necessity, and that I have seen it followed by fatal results, in cases where in all probability recovery would have taken place had it not been resorted to.]

CHAPTER IV.

OPERATION IN A CASE OF VERY LARGE STRANGULATED HERNIA.

On Tuesday, June 30th, I was requested by Robert Cook, Esq., Surgeon, of Gainsborough, to visit Mr. B. C——s, a gentleman of eighty-five, who had been his patient for some years, and who, for a considerable period, had been the subject of a very large irreducible hernia. The day before he had been to a village feast and partaken, perhaps, a little more freely than was his custom of the good things of the table; and, at dinner, of some cherries and rather old and slightly acid ale. Upon his return, he complained

of great pain, referred to the pit of the stomach; headache; and sickness, with frequent vomiting. Upon examination, we found that the hernial sac, which nearly reached down to the knees, was more than usually distended, and that there was a feeling of great tenderness upon even gently handling it. The tongue was much coated; the pulse 120. Before I came, the surgeon had very properly taken away some blood, which was covered with a particularly thick yellow crust, and very much cupped. He had also thrown up several clisters, and given repeated doses of calomel, followed by sulphate and carbonate of magnesia in mint water. This was the state of our patient at the moment when I first was called upon to see him. Here was a case of strangulated hernia in an old man upwards of eighty-five; that hernia was irreducible, and had been so for years; that hernia was so large, that the abdomen was shrunk to one quarter its natural size; the sac, which, as I before said, reached nearly to his knees, evidently holding the greater portion of the intestines: an operation, however, appeared to offer the only chance of safety, and it became a question how, and when, it was to be performed?

Mr. Cook fully coincided with me that an operation was indispensible; and, that the sooner it was performed the better. I have had occasion to operate several times in cases of strangulated hernia, and am fully satisfied that, in the great majority of cases, the patient does not die from the operation, but from the operation being delayed too long. It is no kindness to sit by the bed-side of a man until he dies of strangulated hernia, and then to claim from his friends credit for more than ordinary kindness and attention. After every reasonable means have been tried to return the strangulated bowel in vain, an operation must at once be performed, for

"Gratia ab officio quod mora tardat abest."

Let me, however, again and again repeat, that in no case are delays more dangerous than in strangulated hernia.*

As soon as the patient could be induced to submit, I performed the operation in the following manner:—an incision three inches in length was made in the integuments covering the tumor, com-

* If I have ever the misfortune to be afflicted with this dreadful complaint, I should not like six hours to pass without the division of the stricture, so fully am I satisfied of the danger of delay.

mencing a little above the external ring; perhaps the incision might extend for two inches and a half below, and one inch and a half above, the external abdominal ring; for I concluded, from the very large size of the hernia, that we should find the seat of stricture either at, or very near to, the external ring. After cutting through a very thick covering of fat, the tendon of the external oblique muscle, and the fascia of the cord, which the reader will remember is derived from the tendon of the external oblique muscle, a little below the ring, was exposed. This fascia was very carefully divided, upon a director, as was also the cremaster muscle. I then passed my finger upwards, and introduced a common hernia knife upon it, dividing the ring to the extent of an inch. Some little difficulty was experienced in dividing the stricture. I had met with a similar difficulty before. I was operating with a common hernia knife, the probe-point of which was much too long. In this case it was no easy task to get the end of the knife under the stricture, and that difficulty was considerably increased by the length of the probe-point. You have to push this along under the stricture before you can turn the cutting edge upwards, and thus bring it to cut the part. I was not, on this occasion, operating with my own knife; but I have had one made by Mr. Pepys, with which I have twice performed the operation, and, from the blunt point being shorter this difficulty was avoided. I have mentioned this to one or two surgeons who complain that they have also experienced much trouble from the cause just alluded to.

Shortly after the operation the poor old gentleman said, "he was much better, and that the pain of cutting was nothing to the agony he had experienced before." The pain was gone, the hiccough no longer present, and he enjoyed several hours of calm and refreshing sleep.

I met Mr. Cook every day in consultation until the time of his death, which took place four days after the operation: it was, however, satisfactory to feel that the operation had relieved our patient from the stricture under which the bowel was labouring; and had it not been for his advanced age (upwards of 85) there can be little doubt but that it would have been successful. We were sorry that no post-mortem examination was allowed; and I am sorry to add that this is but too generally the case in the country: there is a feeling against it that cannot be got over—a feeling

we would fain hope did not exist in this nineteenth century. The present case was one of great interest; it was one of importance to the public; and I do say that when an examination of the body, (conducted, as it always is, in a way that tends not in any degree to disfigure the mortal remains of those who have been dear to us), can be made of use to mankind at large, by the light it throws on the treatment of disease, the relations and friends of the deceased do a positive injury, a direct act of injustice to society, by saying "no examination after death shall take place." Moreover it is an act of cruelty also to the surgeon or physician who has attended the poor man during life. I always like the satisfaction of knowing that all has been done that could be done for my patient, and such I am certain is the feeling of the whole of my professional brethren.

Permit me now to make a few remarks upon cases of very large hernia, and the plan of treating them.

The case in which I last week operated was unusually large; the testicles were wasted, and the penis buried in the tumor. In truth, the skin of the penis and lower part of the abdomen were stretched over it; the cavity of the abdomen was also considerably diminished; in fact it adapts itself to its contents—a circumstance which must never be lost sight of. The case of Mr. R. C——s was an old oblique inguinal hernia; the neck of the tumor was shortened, and the openings of the canal approximated, and more in a direct line, the epigastric artery being a little behind, and to the inside of the neck. It is always more or less displaced in such cases. The direct hernia passing at once through the parietes of the abdomen opposite to the external ring, does not, until it has reached that point, come in contact with the spermatic cord, having on the outer side of its short neck the epigastric artery.

In the case more particularly before us the strangulation had arisen from two causes: first, from the accumulation of its solid, fluid, and gaseous contents, its volume was much increased, and the circulation of necessity retarded; and secondly, from another portion of intestine having been forced down; for though the opening through which the bowel had originally passed was large enough to admit it, it was not sufficiently so to contain the additional portion that had been forced down. Among the causes of hernia in the first instance, and strangulation afterwards, from the

forcing down of an additional portion of intestine. I have found, from repeated enquiry, that the violent exertions of patients habitually costive, to expel the hardened fæces, are the most frequent. I have no doubt that violent straining at stool, in this instance had forced down additional portions of the viscera, and thus induced the serious distress and the alarming danger, the operation was undertaken to relieve. But the hernia was also irreducible, and had long been so. This arose from the very great contraction of the abdomen owing to the long continued expulsion of its contents; from the very small opening through which the viscera had passed causing the parts protruded to become engorged; and lastly, from the nature of the contents of the tumor; for I have little doubt but that the hernial sac contained either the sigmoid flexure or the caput coli; we might also add, by an accumulation of fat in the appendiculæ of the large intestines, which were protruded, or from some induration of the omentum.

In the operation above mentioned the stricture was divided external to the sac. Sir A. Cooper, in his valuable work on hernia, says "I know of no situation in which a man is placed under greater difficulty, than in which a surgeon has to operate on a hernia of very considerable size, and finds a great quantity of intestine on the lap of the patient, and the parts so diminished, from the length of time the hernia has existed, that there is no room to return the intestine which has descended. He tries to push back the intestine, it eludes his efforts, and after repeated attempts, when he has at length succeeded in returning a considerable portion of it into the abdomen, the whole rushes out again into the scrotum. So much handling of the intestine necessarily leads to such a degree of inflammation as to endanger the life of the patient." (Lectures on Surgery, p. 224)

But this is not the only danger; however carefully we may handle the intestines, however gentle our manipulations in attempting to return them, they nevertheless burst, scattering the fæces over the hands of the operator, and the patient either sinks in a few hours or dies at the end of some days, from want of nutrition; for the part which gives way will generally be some portion of the small intestines, and the poor patient must sink from constitutional irritation and inanition: for that degree of lacteal absorption necessary to the support of life, cannot take place.

It must appear evident to every practical surgeon that after a bowel has become strangulated for even a very few hours, it is in an incipient state of inflammation; in all cases that inflammatory action is increased by roughly handling the parts, and therefore the employment of the taxis, if continued too long, or used with too much force, no doubt tends to increase the danger of the patient, and adds not a little to the causes tending to make any operation that may be performed unsuccessful. This reasoning applies to all cases; but what must be the consequence in such as we are more particularly examining in the present paper—what the consequence of endeavouring to return any additional portion of intestine that may have come down into an old hernial sac—the hernia having existed for years, and for years being irreducible? I think that in all cases such practice is likely to be productive of the greatest danger, but more particularly in cases of old and very large hernia: by such long and continued attempts at reduction, the bowels become bruised and seriously injured, and, like any other contused tissue, will inevitably, most seriously suffer. Am I exaggerating the dangers attendant upon such a system? By no means; but what must be the danger, what the result, if the operation be performed in the old way? if the hernial sac be divided, and the protruded intestines received into the hands of the operator? if they remain there for the space of half an hour, continually pushed up, as often to fall down again? Before the operation they have been perhaps much injured by fruitless attempts at reduction, and, like any other part of the body, will stand a much better chance of recovery if their surface be not exposed; will stand a much better chance of recovery if not obliged to undergo, for a long period of time, the attempts made to return them.

Again, even if the bowels had never been injured at all, even if a patient were in a state of perfect health, under the most favourable circumstances, what would be the effect of opening so large a tumor, and exposing the intestines? The most hazardous inflammation, increased by breaking down adhesions which had been present for years. And if the abdomen were able to contain the contents of the tumor (which in this old gentleman was quite out of the question), what surgeon would have the temerity to return them? for there is every probability, every reason for supposing, that the return of parts, which had so long been

protruded, into the abdomen, would bring on the most alarming symptoms.

But, for the reasons already stated, they cannot be returned, and, what is more serious still, they cannot be retained in the sac which has been improperly opened. In the Journal of Foreign Medicine (No. 15, page 160) a curious case is mentioned in which the sac was divided in a very large scrotal hernia, and about one foot of the colon which was contained in it could not be returned The integuments were not sufficiently large to cover it; still its surface granulated, the skin, as the cicatrix contracted, extending itself over the swelling, which also diminished in size, and in a few weeks the man was discharged cured.

In such cases, then, we must avoid pulling the parts about, and perform the operation as soon as possible; we must not dream of opening the hernial sac, breaking down the adhesions, and attempt to return into the abdomen that which it is too contracted now to hold; nor must we run the risk of exciting inflammatory action by the exposure of the bowels. The rule of Sir A. Cooper here holds good, viz. "That when the tumor is of long standing, exceedingly large, perhaps extending more than half way down to the patient's knees, and its contents have never admitted of being completely reduced, the indication is to divide the stricture, provided a strangulation take place, but without laying open the hernial sac, or attempting to reduce the part."

In performing the operation great care must be taken that the stricture is not only divided, but divided fully. Dupuytren informs us that in eight out of every ten cases of strangulated bubonocele, the stricture is seated at the neck of the sac, and he supposed that this took place from some alteration in the structure or nature of the peritoneum at this part. But Mr. Cooper well remarks, that, in a recent protrusion, strangulation cannot depend upon any thickening of the neck of the tumor (vide Cooper's Surgical Dictionary, 7th edition, page 724), and he admits that large external swellings were not very liable to be strangulated in this way. The justly celebrated Dupuytren, (Clin. Chir., vol. 1,) has also made some valuable remarks upon the form of the tumor, and directs us to the seat of the stricture by remarking, that "when it is situated at the external ring the tumor formed by the hernia does not reach above this point: the

inguinal canal, therefore, is undistended, soft, and indolent to the touch, while the ring itself is hard and tense; on the other hand, when the stricture is at the neck of the sac, that is to say as far up as the superior orifice of the inguinal canal, this is always full, hard, and tense."

In some the stricture extends the whole distance of the inguinal canal, and here we must lay its upper surface open its whole length.

Without examining all the varieties of stricture that are met with, I may remark, that two strictures sometimes exist, a slight one at the abdominal ring, and a second and more serious one at the neck of the sac. This very important fact must ever be kept in mind, for if the surgeon supposes that the stricture exists at the abdominal ring, and divides *it* only, the bowel is pushed into the inguinal canal, and not into the abdomen: should another stricture exist higher up, in this case the symptoms continue, and death must inevitably follow, sooner or later.

Dupuytren remarks, that when the strangulation takes place at the upper portion of the inguinal canal, the danger is much greater, and the parts sooner become gangrenous, because the edges of this opening are very sharp, and make very great pressure on the neck of the sac; the abdominal ring is wider and has blunter sides; strangulation in this situation is therefore slower.

Little need here be said upon the treatment of the bowel, should it in any instance be found mortified. Mr. Lawrence recommends it to be freely opened, to obtain at once that relief (viz. evacuation of its contents), which nature seeks by the process of gangrene. (On Ruptures, p. 299.) Nor must we forget that by this plan Sir A. Cooper snatched from the brink of the tomb a female who was pregnant at the time of the operation, and was afterwards delivered of a child.

Treatment after the operation.—In the first place, the patient must be kept in bed, a pillow placed under the knees, and every means taken to relax the muscles of the abdomen, by placing him in as easy a position as possible. In large cases the hernia must be supported. A large pad or small pillow will answer very well. If the sickness frequently present continues, perhaps the following draught will relieve it sooner than any other:—

℞ Liq. Opii Sed., ♏viij; Acidi Hydrocyanici (Scheels) ♏iv; Potass. Bicarbonatis, ʒi; Aquæ, ʒvj; Misce. Capiat quartam partem, quaque 3tia hora, si opus fuerit.

Evacuations from the bowels must at once be promoted by clysters and small doses of sulphate of magnesia—a dram dissolved in peppermint water every two or three hours; the recumbent position must also be maintained, as any exertion will cause the bowels again to come down. Inflammation of the bowels and peritoneum must be attacked by bleeding, calomel and opium, fomentation to the part and leeches; castor oil will be the best aperient. Should diarrhœa come on, a mixture long used by my worthy friend, Mr. Carrick, R. N., surgeon, Kensington, is very useful, and often affords relief.

℞ Confect. Aromat., ʒj.; Sodæ Sesqui-carbonatis, ʒj.; Aquæ Menthæ Pip., ʒvss.; Tr. Card. Co., ʒss. M. Coch. ij. mag. pro re nata.

Opium can of course be added if required. After the operation, the diet must at first be kept low; but when all danger of peritoneal inflammation is past, this plan must be changed, and wine, quinine, cordials, and a generous diet allowed. We must remember, however, that though we have succeeded in curing the patient, we have not prevented, by the division of the stricture, other portions of the bowel coming down; and, therefore, we must by proper means guard against such an unfortunate occurrence.

In all cases of large irreducible scrotal hernia, the tumor must be very carefully supported by a proper bandage, and injury to the part avoided, as a severe blow might occasion rupture of the bowel, and death. We shall do well also to caution our patients as to their diet and mode of life: excesses of every kind must be most studiously refrained from. In the case of Mr. R. C—s, now before us, strangulation of the bowel was to be traced to this cause. Warm aperient medicines must, therefore, frequently be taken; as the compound rhubarb pill at bed-time, with some aperient during the day. Clysters of warm water will be of great use; in fact, the bowels must not be overloaded, either by a too free indulgence at the table, or an accumulation of hardened fæces. When it can be taken, a dose of castor oil now and then, at bed-time, will answer every purpose; when it cannot, the following mixture may be used—

℞ Magn. Sulphatis, ʒiv.; Infus. Sennæ, ʒv.; Tr. Card. Co. ʒj.; Ess. Menth. Pip. mxxx. 4ta pars hora decubitus.

Cases of so large a nature as the one now recorded are certainly not very common. Sir A. Cooper has operated in three cases

(Leetures on Surgery, page 225). He has, however, left in his valuable work abundant information as to their treatment; and he most eloquently urges the attainment of that knowledge of anatomy whieh alone enables a man to operate with advantage to his patient. We may look on, and think it very easy to divide part after part; and so it is to the man who has gained that information which this surgeon urges all to aequire. An examination of his writings, and the works of Dupuytren, Cloquet, Lawrenee, Guthrie, Key, and others too numerous to mention, will afford every faeility to the study of this interesting and important disease; they will, in faet, induee the student to examine the subjeet for himself, in the disseeting room; induee him there to read the book of nature—a volume ever open; and amply will it repay the most attentive and diligent research.

CHAPTER V.

ON THE TREATMENT OF BRONCHOCELE.

The first questions a student asks when the name of any disease arrests his attention, are (or ought to be), what is this eomplaint; where situate; on what does it depend? Possessed of this information, it behoves him, in the seeond plaee, to inquire what are the most successful means of treating it.

The term bronehocele is derived from the Greek words, *βρογχος*, the *wind-pipe*, and *κηλη*, a *tumor*; it is named by the Swiss *gotre*, or *goitre*; you frequently see it among the inhabitants of the hills of Derbyshire, where it is eommonly known as Derbyshire-neck.

Bronehoeele may be either simple or compound: the *thyrophraxia* of Alibert is the most common form of the disease, and is nothing more than an enlargement of the thyroid gland, the

skin covering the part being unaltered in structure, and not involved in the disease. For the most part it is free from danger, unless it becomes so large as to impede respiration. It is free from danger, simply because the duties of this gland in the economy of our nature are not so important as to be essential to the continuance of life. One case, however, is mentioned, in which the disease assumed a cancerous form, and the woman afflicted with it perished in consequence. The seat of bronchocele, therefore, is generally found to be the thyroid gland, although cysts are sometimes formed in the cellular membrane surrounding it: this leads us to speak—

2dly, Of compound bronchocele.—Here we have the disease in the greatest possible severity: sometimes calcareous and other heterogeneous substances are connected with it; at others the gland itself is attacked with true sarcoma. The term bronchocele, in England, always signifies simply an enlargement of the thyroid gland, which not unfrequently occupies a space extending from one angle of the jaw to the other; and also forms a swelling on the front part of the neck. This swelling is more or less irregular in form. At first it is generally of a soft spongy feel; the skin retaining its usual hue. If the disease, however, remains for a considerable time, the veins of the neck frequently become varicose.

Prosser remarks—"The tumor generally begins between the eighth and twelfth years; it enlarges slowly during a few years, but at last augments very rapidly, and forms a bulky pendulous tumor. Women are far more subject to the disease than men; and the tumor rapidly increases during their confinement in childbed." Sometimes bronchocele affects the whole of the thyroid gland, that is to say, the two lateral lobes and the middle portion, so that you may observe three tumors of unequal size. Sometimes after death the gland has been found perfectly free from disease, the tumor having formed among the surrounding lymphatic glands and cellular substance.

Burns, in his Anatomy of the Head and Neck, remarks, "that when one lobe of the thyroid gland is affected, it may extend in front to the carotid artery, and be lifted up by each diastole of this vessel, so as to have the pulsatory vibrations of an aneurism." Some authors have observed, also, that the right lobe is more frequently enlarged than the left; this fact, I believe, was first men-

tioned by Alibert; and Mr. Rickwood tells us "that he has witnessed the same thing in every case that came under his notice in the neighbourhood of Horsham, Sussex.*

This disease is common in most of the valleys of the Pyrenees, Appenines, and Alps. In fact, there are certain localities where it is so frequent, that you can scarcely find a single individual altogether free from it. In the Tyrol and Corinthia there are to be found whole villages in which, without exception, all the inhabitants have these swellings, and they are considered indicative of additional personal charms. In many cases the swellings are so large, as not to be concealed by any kind of clothing. A state of idiotism is another affliction not unfrequently attendant upon bronchocele, particularly in countries where it abounds; yet all who are attacked with bronchocele are not idiots, or cretins as they have been called. In Italy and elsewhere it is met with in persons whose mental endowments are of the highest possible order. A patient whose case I shall shortly mention was a young lady of considerable talent, shewing an aptitude to acquire whatever she attempted to learn. Several writers, and among them Fodere, have ascribed the state of the mind to the affection of the thyroid gland. This opinion, however, seems to have been arrived at without any reason; for in idiots the mental faculties are weak from their earliest years. In many, also idiotism is complete where we find no enlargement of this gland, or even a tendency to enlargement, and in cases where the tumor is too small to impede the current of blood to the head. It would consequently appear that the cases in which weakness of intellect and goitre have been observed co-existing, must have been accidental; and this conclusion appears strengthened, when I remember that I have of late frequently observed bronchocele in particular districts, and at the same time seldom or ever observed any of the inhabitants to be idiots. Mr. Cooper, in his last edition of his Surgical Dictionary, remarks, "that bronchocele is not confined to Europe; it is met with in almost every part of the globe. Professor Barton in his travels amongst the Indians, settled at Oneida, in the state of New York, saw the complaint in an old woman, the wife of the chief of their tribe. From this woman he learned that Bronchoceles were by no means uncommon amongst the Oneida

* Vide Med. and Phys. Journal, 1823.

Indians, the complaint existing in several of their villages. He found, also, that the varieties were the same as in Europe."

The great danger of bronchocele in this country, appears to be, as above stated, the difficulty of respiration produced by the pressure upon the wind-pipe by the tumor, and other glands, which become enlarged; for by disordering the pulmonary circulation the pulse becomes quickened, irregular, and very frequently intermittent. A strong throbbing is excited in the region of the chest, followed, as some writers remark they have observed, "by even fatal disease of the lungs; consequences frequently not supposed to have any connexion with this disease, though, in truth, the bronchocele has been the primary cause of them."

Causes of Bronchocele.—It would appear from what we have stated—from the observations of all writers upon this subject—that certain districts tend to produce this affection of the thyroid gland. Some have gone so far as to assert that change of air is more efficacious than any remedy that can be used. Again, it has been attributed (and apparently with some degree of reason) to certain chymical properties in the water; and Dr. Odier gives credit to this theory, because he observed "that distilled water not only prevented the increase of the swelling, but also tended to lessen its bulk. However, every explanation is very unsatisfactory, particularly when we call to mind this passage in the writings of that justly celebrated physiologist, Humboldt. "Persons afflicted with bronchocele (he observes) are met with from Honda to the conflux of the Cauca, in the upper part of the course of the Magdalen River; and on the high flat country of Bigota, 6000 feet above the bed of the river. Now the first of these three regions is a thick forest, while the second and third have a soil destitute of vegetation; the first and third are particularly damp; the second is peculiarly dry. In the second and third region the winds are very tempestuous; in the first the air is stagnant.

Temperature.	Centigrade degrees.
First and second region	22 and 33
In the third	4 and 17

Again the waters drunk by the inhabitants of Mariquita, Honda, Santa Fé de Bogota, where bronchoceles occur, are not those of snow, and issue from rocks of granite, freestone, and lime. The temperature of the waters of Santa Fe and Mompor, drunk by such as have this disease, varies from nine to ten degrees. Bron-

ehoceles are more horrid at Mariquita, where the springs which flow over granite are, according to my experiments, chymically more pure."

So much, then, for the influence of local causes in producing this disease, at the same time we must admit that certain districts are more subject to goitre, although there are few parts of England altogether free from it. This leads me to speak, lastly, of the

Treatment of Bronchocele.—I have divided Bronchocele into two kinds—1st, simple; and 2dly, compound; to the treatment of the former, however, I shall confine my remarks in the present paper. Without entering into a critical examination of the favourite plans of different surgeons, I shall extract a few cases from my note-book, illustrative of the method of treatment that I found to be the most successful.

Case xxvii.—Miss Mary R—— æt. 17, somewhat below the middle height, thin, and of rather a sallow complexion, came with an enlargement of the thyroid gland, which she said she had been suffering under for the last six months, during three of which she had been under the care of a surgeon who had given her Tr. Iodinæ in large doses. The catamenial discharge, though not altogether wanting, was pale and scanty, the periods being very irregular; the tongue was furred, with red edges; the bowels costive; frequent headache; and a disinclination to walk about; fancies she is thinner since she took the iodine.

I thought it would be useless to attend to the enlarged gland until her general health was improved; I therefore ordered her to live upon

New milk with meat once a day; the meat to be dressed in the plainest manner; to avoid pastry and vegetables, and to take as much exercise as her strength would permit.

I likewise ordered her to take the following pills three times a week, at bed-time.

℞ Pil. Hydrarg. gr. ij.; Pil. Rhei co. (E. P.) gr. viij. Misce ft. pil. ij.

She also took the following mixture:—

℞ Inf. Gent. co. ℥iij.; Sodæ Sesqui-carbonatis, ℈j.; Tr. Aurantii, ℥ss.; Aq Cinnam ℥iiss. Capiat coch. iij. mag. ter quotidie.

Under this plan of treatment she gradually recovered her health; the yellow appearance of the conjunctiva was exchanged for the hue of health, and the sallowness of the skin removed; the bowels were in a more healthy condition, to use her own words, "if it were

not for my neck I should be quite well, but it hurts me when I sing."

The Bronchocele during this time (about one month) remained much the same: if anything, it rather diminished than grew larger; it was, however, still very large, the whole gland being affected. The tincture of iodine having failed, as well as the local application of it, I determined to adopt a plan that I had before found to be successful, and which I have every reason to think will succeed in the great majority of cases. I first ordered the application of six leeches to the part; these were repeated three times during the first ten days, the part being well fomented three times a day with warm water.

℞ Liq. Potassæ, ʒj.; Tr. Card. co ʒij. Misce. Sumat ♏xv. ter quotidie. ex. inf. Zingiberis.

The liq. potassæ was gradually increased to ♏xxiv. three times a day. I then thought it advisable that some local application should be made use of, and the following ointment was ordered to be applied (rubbed in with the hand) twice a day, the part being first well washed with warm water for at least a quarter of an hour.

℞ Potass. Iodidi, ʒj.; Ung. Cetacei, ʒj. Misce. ft. ung.

This plan of treatment was steadily followed during the months of June, July, and August, the patient taking once a week a pill composed of pil. hydrarg. et ex. colocynth, with a rhubarb draught the following morning. The last week in August she came to me without the slightest remains of the bronchocele.

Case xxviii.—Mary Padley, æt. 14. Her mother has a large bronchocele, which has not increased for some years past. "Her daughter had some difficulty in swallowing, and at length they found a small tumor." It is now about the size of an orange, situated on the right side of the gland, and gradually increasing towards the other side of the neck. She is very much out of health; complains frequently of pain in the head, and a great disinclination to take food. Has menstruated once, about two years ago, but never since. The mother, who lived formerly in Derbyshire, says that all her own family are subject to goitre. The girl is of rather light complexion, blue eyes, thin and tall.

To live upon a milk diet, with meat once a day; to avoid fruit pies, (upon which she says she has almost lived for the last two years,) and vegetables.

℞ Pil. Hydrarg. gr. j.; Pil. Aloes. c. Myrrh., gr. iv.; Ft. Pil. alternis noctibus, sumend.

℞ Vin. Ferri. ʒij. ; Aq. ʒiss. M. ft. haust. ter quotidie sumendus.

For some time subsequently I treated this case with the tincture of iodine, but the tumor increased gradually, till I substituted the liq. potassæ in the same doses as in the former case. The gland was leeched twice, and rubbed with the same ointment. In three months the swelling had altogether vanished, after which the girl was directed to attend particularly to her health, to keep her bowels open, and to avoid improper food. I heard from her a few days ago; the bronchocele has not returned.

Case xxix.—John J——, a boy, æt. 13. Left lobe affected ; but small, not larger than a walnut. A blister was applied ; after it had healed, leeches, alterative medicines, and liq. potassæ. This case was cured in six weeks. No local application after the blister and leeches, except friction with the hand.

Case xxx.—Mrs. R——, (the aunt of Case 27) observed about three years ago, that shortly after her last accouchement, a swelling appeared in the front of her wind-pipe ; it has gradually increased in size, and is now very large, extending down the neck. She complains of "her health being very bad." Her hair is of a light colour, rather inclining to a sandy tinge ; the eye-lashes are light : the eyes blue ; the complexion pale : the whole appearance enemic. She was ordered blue pill and colocynth, with some bitter infusion and soda ; after which leeches were applied to the tumor ; a blister afterwards. The gland to be well fomented with warm water, and the following ointment used once or twice a day :—

℞ Potass. Iodidi, gr. xxx ; Pulv. Iodinæ, gr. x ; Ung. Ceta., ʒj. M. ft. ung.

Case xxxi.—Miss J——, residing at Bottomsall, applied to me, January, 1843, with a bronchocele of very considerable size. She first observed a tumor in the centre of the wind-pipe, about ten months before, it had much increased, particularly at the sides. "Had been to a surgeon who had given her some dark drops (Iodine), but they had not been of use." She was treated precisely the same as the cases already mentioned, and in three months all remains of the tumor had disappeared.

I could multiply these cases, were it necessary ; but will only remark that I think we may conclude from what has been stated, 1st, that although it abounds in certain localities, that we know not on what it depends ; or why it should abound more in Switz-

erland or Derbyshire than other places; 2ndly, that we have no reason for concluding that goitre should produce *cretinism*, although the two are frequently combined; [Dr. Wilson remarks, that "he has observed epilepsy and bronchocele to exist in the same person."] 3dly, that it is highly important to attend to the general state of the secretions before attempting to make use of specific remedies; and also that considerable advantage appears (in the cases I have seen) to result from fomenting the part affected with warm water (previous to using the iodine ointment); the application of blisters, and the local abstraction of blood by leeches: the exhibition of liquor potassæ, and alterative medicines.

CHAPTER VI.

CANCER OF THE BREAST.

At page 66, I have already offered some observations on the anatomy, physiology, and pathology of this disease, and shall, therefore confine my present remarks to a few practical hints on the treatment of cancer. The student taking up a work on cancer in the French language will at once be struck with the immense success which attends their operations, and on again examining the disease in sober English, be at a loss to account for the want of success, on this side the water. The truth is, that the word scirrhus is used much too indiscriminately by them; every indurated mass is called a cancer, and the list of successful operations swelled in proportion. My own experience, and that of every practical surgeon, furnishes a dark list of fatal cases, and however much men may write or talk of their success in curing *cancer*, either by the use of internal remedies, local applications, or the knife, I must still continue to take a very gloomy view of every

case of cancer of the breast that is placed under my care. Every man who says he can, by some means, known only to himself, cure cancer, is a designing empiric entirely lost to all sense of shame, honour, and honesty. We have no medicine that will cure the disease, and it is our duty at once to say so, in order to put an extinguisher on the wretched quacks who are daily advertising their nostrums for the removal and complete cure of cancer. But although we have no medicine that will cure, and no application that will remove, a scirrhous tubercle when it has formed, yet the progress of the disease may be retarded, and the constitution much improved by the administration of alterative medicines, and if an operation has been performed, the exhibition of Plummer's pill and the compound decoction of sarsaparilla, with small doses of the potass. iodidi will lessen the chances of the return of the disease. I think too much attention cannot be paid to the state of the system, both before and after the operation, and that the disease returns in some instances from a want of these precautions. Sir A. Cooper is of opinion that "full three-fourths of these cases arise from grief and anxiety of mind; it is the state of the mind and body that predisposes disease. The mind acts on the body, the secretions are arrested and the result is the formation of scirrhus. Look then to this complaint, not only in altering the state of the constitution, but relieve the mind, and remove the anxiety, if possible, under which the patient labours."* It is generally thought that this disease of the breast is connected with a suppression of the menses; it usually makes its appearance before the change of life, but if a tumor has existed in the breast for many years it not uncommonly takes on a malignant action, at, or about, the time when the menses cease, an argument for its early removal, even before any malignant disease sets in. Sometimes the disease commences at a very advanced period of life. Sir A. Cooper saw it in a woman of eighty-six, the disease in such cases advances very slowly and when occurring in advanced age does not shorten life; at least such was the opinion of this very distinguished surgeon, who removed a scirrhous breast for a lady seventy-three years of age which had begun to ulcerate; the disease did not return and the patient did very well. Again, in some, the progress of cancer is very slow. Sir A. Cooper met with

* Lectures on Surgery, page 337.

one lady, who had had the disease twenty-two, and another seventeen years. These cases may be related to patients who come to us in such a state as to render an operation quite useless; we must tell them that an operation cannot be performed, that the disease cannot be cured, but that it may yet remain ten or fifteen years without advancing; this will at any rate cause a beam of sunshine to dart, even from their tearful countenance, and these words of comfort prove the rainbow of hope to the storms of existence. There is hope even for me, she exclaims—hope, that life may yet be preserved some years—death, disguise the feeling as you may, to the best of us is but a very unwelcome visitor, and seems divested of half his terrors when viewed afar off. The disease is most common from thirty to fifty, seldom occurring before thirty. I have in my possession a breast that I removed some years ago from a patient at Everton, æt. 29, she died two years after the operation, of rheumatism attacking the heart; up to the time of her death she had felt no pain in the part, although it was very violent before the operation, and the disease well marked, and of some extent. I examined the body, there was no return of the disease. Mr. B. Bell who was present at many of the operations performed by Hill,* is of opinion "that cancer is a local complaint not originally connected with any disorder of the system, and that a general cancerous taint seldom or never occurs but in consequence of the cancerous virus being absorbed into the system from some local affection." M. Lisfranc also denies that cancer is contagious, and that there is any general infection of the system in this disease. With respect to the opinion that cancer is at first a local complaint and that the system becomes secondarily affected by the absorption of a certain virus from the local disease, I think it unsupported, by facts, or at any rate a theory requiring confirmation. The practical deduction from it is, however, important, viz. to operate in all cases as soon as possible. M. Lisfranc has recently proposed a very interesting question, viz.—*in a case of cancer, with, or without, ulceration, are we to consider the whole substance of the tumor as being occupied by scirrhus?* He thinks not, and in cases where the cancer is of too large an ex-

* Would that every surgeon could give the same results as Mr. Hill. In 1770, the sum of his cases stood thus:—of 88 cancers extirpated, at least two years before. Not cured, 2—broke out, 9—threatened with a relapse, 1—in all, 12; little more than a seventh of the whole number.

tent to admit of complete removal, "for the patient would succumb during the healing of the large wound," leeches are to be applied around the base of the tumor in proportion to the strength of the patient, and the parts covered by a large poultice. "By such means, carefully adopted, and extended over a sufficient space of time, cancerous tumors have been frequently reduced at La Pitié from a size represented by 10 to 1, to one of 6 to 4, and not only has the operation then become practicable, but no more than an ordinary wound remained after its performance." It appears to me that an operation under such circumstances would be almost hopeless, and the local means employed previous to its performance very likely to mask the state of parts, and prevent our removal of the entire disease: to hold out the smallest hope of success, the incisions must be made very wide of the tumor and every particle of the diseased mass, together with those long white bands, (which Sir A. Cooper terms "roots of the disease") which frequently run from it in all directions, most carefully removed. The only means of curing the disease is by an operation for its removal, and the chances of success are in proportion to the length of time it has existed. The sooner we perform an operation the better, *delays are dangerous*, and I would rather run the risk in very rare instances of removing a non-cancerous breast than by not removing it, expose my patient to the chance of becoming a victim to this relentless disease. I have already insisted on the importance of an alterative course of medicine, both before and after the operation, and on the necessity of removing the diseased mass as early as possible—of course no prudent surgeon would operate in cases where it is impossible to remove the whole of the disease or when it is rapidly spreading; where the cancerous cachexia is fully established, and there is reason to suppose the existence of internal carcinoma; when the disease has existed for a great number of years and appears rather an inconvenience than a malady, remaining in an almost stationary condition and giving rise to no serious derangement of health. Desault, Amussat, Lisfranc, and others appear to think enlargement of the glands hardly any hinderance to ablation when recent. Extreme debility although it much diminishes the chances of success, does not, when arising from pain, and repeated hæmorrhage altogether ensure failure, and the presence of extensive ulceration did not in several

cases prevent a fortunate issue to the operation. M. Lisfranc operates even when the cancer has arrived at an advanced stage, and says "when the viscera is in a healthy condition, and the whole disease can be removed without leaving a wound of too dangerous an extent, sound surgery demands an operation of which I have *had proofs both in Dupuytren's practice and my own.*" Mr. Liston holds a different opinion to our friends on the continent, and remarks, "when enlarged glands are perceptible above the clavicle, or in the intercostal spaces, the practitioner who would advise interference with the original tumor *must be grossly ignorant*, atrociously unprincipled, or of unsound mind." * "I ought to mention," says Sir A. P. Cooper, "that you should never operate in this complaint when dyspnœa is present for I have known patients who have come to our hospital, and have been operated on for this disease when they have had this symptom, and who have died in two or three days after the operation; on examination, water has been found in the chest, and tubercles on the pleura." On the whole I am obliged to speak unfavourably of the success of this operation, and think that in the great majority of cases the disease sooner or later appears. And yet, it is our duty to operate, even under unfavourable circumstances. If a patient comes to me suffering from cancer of the breast, and there is nothing to forbid the operation, I at once advise her to submit, telling her that the removal of the part, affords the only chance, and that every day she delays, the disease is advancing and the operation consequently less likely to succeed. The steps of the operation need not be described, it is a simple piece of dissection, and does not occupy many minutes—perhaps one or two; *but remember*, (and should this meet the eye of a student or young surgeon who has never yet removed the breast, the caution may not be thrown away) the length of time occupied in performing the operation is but a secondary consideration to the effectual removal of every particle of the disease. The foolish remarks of lookers on, of would be critics with stop-watches, the cries and struggles of the patient must be altogether disregarded. No half measures will do here; a fellow-creature—a woman, has placed her life in our hands; resolved to submit to a dreadful operation in the hope of saving herself from suffering and preserv-

* Elements of Surgery, p. 333.

ing life. No chance must therefore be thown away, and from the moment the knife is taken up, to the termination of the dissection, we must be fully resolved to remove every particle of the disease. The first incisions should be made very wide of the tumor and the knife turned rather from than towards it, in order that the incisions may not encroach upon the disease. After the mass has been taken away, the whole wound must be sponged and every molecule if possible removed; parts at all suspected must not be left, it is far better to take too much than too little. After the vessels have been tied the cut surfaces may be brought together by a few points of suture, the most simple dressing applied, and the arm supported by a sling. The immense mass of plasters, compresses, bandages, and ointments so often applied, do much harm and cause great annoyance; cold water at first, and after the removal of the stitches, warm water, are the only applications required, with the exception of some little support below the incision.

This is the treatment under favourable circumstances; but what are we to do where the disease has made considerable progress? are we to say to this patient I can do nothing for you, die you must, and that in a few months; *and what a fearful death! not at all; in the former case I advise an operation, not because the disease does not frequently return, but because it affords the only chance; and even in the more advanced stages*, where the internal organs are healthy, *and the glands in the axilla sound, I operate also, although* the disease is *almost certain* to return; it is the *only hope, a forlorn one it is true; a radical cure* is here quite out of the question; *we can only propose a palliative, and I honestly believe the knife is the best we can offer;* although before performing an operation under such circumstances, it is our duty to tell the patient how very faint our prospect of success; and yet there are cases recorded, even on the authority of Sir A. P. Cooper, which had they been permitted to run their course, must in all probability, have terminated fatally in a few weeks, where an operation had restored the patients to comparative health, and even added some years to their existence. If then by an operation I can remove the fœtid discharge, horrid pains, and check the hæmorrhage; revive hope, give comparative ease, and perhaps add some months—it may be years, to the life

of the sufferer, doubtless we are bound to make the effort, to give a fellow creature, inevitably doomed to death—a death I even shudder to contemplate—a chance of life, however slight it may be: at the same time I repeat that the true nature of things ought to be fairly stated, and the operation only undertaken with the consent and at the solicitation of the patient, willing to purchase even a few more months, at so great an amount of suffering, and hoping to obtain even a longer reprieve.*

So much for the removal of the diseased mass by operation; in our general treatment of subjects labouring under cancer, our object, says Dr. Copeland, must be to support "the energies of the digestive functions and the abdominal secretions and excretions, and to impart vigour to the frame by suitable diet and regimen." For these purposes he recommends tonic infusions with *liquor am-*

* "Observation proves," says Lisfranc, "that cancer is liable to relapse, in proportion as its progress has been active, or it has been complicated with acute inflammation. This last is to be met by local depletion, continued for some days prior to the operation. Relapses will be less likely to occur, also, if half an inch of sound skin be included in the incision—leaving, however, enough integument, when it is sound, to procure union by the first intention, thereby diminishing the extent of irritation of the wound and subsequent cicatrix. The surgeon's care of his patient must not terminate with the production of cicatrisation, but also be directed to the prevention of a relapse, which, when patients are docile enough to obey the directions given them, may usually be accomplished. They must be told, that, even when the wound has healed, the cure is only in part completed. All causes likely, whether mentally or physically, to interfere with the health must be sought for and removed.

In persons of a sanguine temperament, or when suffering from the obstruction of some flux, let bleeding be practised; and, if the parts in the vicinity of the cicatrix become congested, a revulsive bleeding of three or four ounces must be employed. The vitality of the susceptible organs must be modified by the use of powdered hemlock (the extract usually being very bad,) for many months. Beginning with a grain every morning, the dose may be gradually augmented to four. Lisfranc has a very high opinion of this remedy, as a solvent and anti-nervine—and its utility is also well seen as the latter, in the gastralgiæ of women suffering from uterine affections. Occasional mild aperients, exutories, in case of retrocession, and, after omitting the hemlock, the external or internal use of iodine, are other useful means. Much good also results from compression, employed by means of agaric and a bandage, and extending beyond the cicatrix. The cicatrix must not be irritated, especially by too early a movement of the parts. The mildest diet, and if debility be not present, even abstemiousness, should be enjoined." [Vide Med.-Chi. Rev. No. 75.]

monia acetatis, or with the alkaline carbonates, and *conium* or *hyoscyamus; bi-chloride of mercury*, in the compound tincture of cinchona, or of the infusion of *sarsaparilla;** or small doses of *blue pill*, or hydrargyrum c. cretâ with camphor and hyoscyamus. Some preparation of opium, more particularly the salts of morphia, will be required when the pain is very severe, but the longer we can delay the exhibition of opium the better. The *diet* must be regulated by the powers of the stomach; the system of starvation so common among the disciples of the Bronssaisian school is highly injurious, and although, at the present day, starvation is frequently enforced, as an adjunct to local antiphlogistic treatment, and patients rapidly reduced to a state of marasmus, nevertheless their cancers flourish as before. Such treatment only produces, in my opinion, the greatest debility, and renders the constitution incapable of combating the disease. Stimulants are decidedly improper, but what says Sir A. P. Cooper.—"The patient sometimes remarks she has been told 'to live on vegetable food only:' my reply is, that 'I should like to know why you have been told so; for the man who has done it knows nothing of the nature of the complaint.' I assure you, gentlemen, that if you weaken the strength by low diet, you will immediately quicken the pulse: you will perceive it in a person with the pulse at 80 increase in a short time to 110 and 120, and become small. Rest assured that, in proportion as you weaken the constitution you quicken the pulse. Do not debilitate it then on the one hand, nor stimulate it on the other; for if you do, it will be the sure way to hasten the progress of the disease."†

I could much increase the length of this chapter by a long detail of cases, but after what has already been written on the subject of the operation it is needless to do this. I will however in addition to those already recorded, mention two or three.

Case xxxii.—I removed the whole of the breast, April, 1842, from Mrs. C—, æt. 44, in the presence of Mr. Jackson, of Bawtry, and another gentleman. A scirrhous tumor had been removed from the same breast seven years before, by the late Mr. Brewerton, and she had no return of the disease until six months ago; the patient did remarkably well, and at this moment, more than

* I consider the infusion superior to the decoction.
† Lectures on Surgery, p. 343.

twelve months after the operation, there has been no return of it.

Case xxxiii.—Mrs. R——, æt. 42. In this case ulceration had taken place. The whole breast was removed. The patient quite recovered, and enjoyed the most perfect health for nearly two years; the disease then returned in the other breast. I do not know the result of the case, she refused to submit to another operation, and in all probability died. At the time the operation was performed, she was told the disease would probably return, but that the removal of the breast might prolong life; under these circumstances it was performed, and certainly she was free from pain and suffering for nearly two years, nor did the disease again arise in the same part. The second operation was not proposed by myself, and I certainly advised her not to submit to it, the glands in the arm-pit being already much enlarged.

Case xxxiv.—September 1st, 1842. I removed the right breast this day, from Mrs. N——, æt. 35. Dr. John Beavor was present. The disease had existed more than a year, and had made some progress. The whole mass was completely removed, together with a portion of the pectoral muscle. The patient has since been married, and now feels quite well; she has no feeling of pain or uneasiness in the part, and on a very careful examination of the cicatrix, a few weeks ago, there was no indication of a return of the disease. Mrs. N. was much improved in health, had gained flesh, and said she never felt better in her life.

Case xxxv.—Mrs. C——, æt. 29. This was the only case in which I ever saw *true scirrhus* developed at so early a period; the disease had existed some time before I saw it. The whole breast was removed, and when death unfortunately took place from disease of the heart, two years after the operation I had an opportunity of examining the body; there was no return of it. The woman had been free from pain and enjoyed good health.

These cases are not recorded to induce a performance of the operation without due consideration, but simply to confirm the opinion already expressed, viz. that in the earlier stages of cancer of the breast, an operation properly performed, may prevent a return of it for many years, and even in unfavourable cases, remove pain and suffering, and prolong life. I will only add, further, that the hygeienic condition of the patient generally should be most particu-

larly attended to, and cheerfulness of mind promoted as much as possible, and a participation in public and private amusements continued so long as circumstances will permit. Change of scene, a drive in the carriage, or a walk daily, when the weather is fine, but not prolonged to induce fatigue, with the attention to diet and medicine already pointed out, will do much to increase the happiness, and lengthen the existence of the sufferer.

Change of climate has been recommended, and supposed to exert some influence on the progress of carcinoma. I fear there is little truth in this, and question whether we are justified, except at the very commencement of the disease, in removing a mother from her family and friends, with the idea that change of country will arrest the disease. How often has this been tried—how often it has failed—how often has the unfortunate woman, after enduring a sea voyage, a long uncomfortable journey, and all the many inconveniences of travelling on the continent; finding her strength declining daily, and the cancer rapidly increasing, worn out by suffering and fatigue, sighed to return, and has just lived long enough to reach her home, bless her children, and die. I have long thought that there is a cruelty in all this, and that it is far better, except perhaps, at the very onset of the disease, and only as a prophylactic measure, after an operation has been performed, to remain at home, enjoying the society of relatives and friends, rather than to wear out the system in a distant country, perhaps to expire among strangers, and be buried on a foreign shore.

CHAPTER VII.

ON THE CAUSES, SYMPTOMS, AND TREATMENT OF SUPPRESSION OF URINE.

Aliter vitium vivitque tegendo.

Mason Good, in his Practice of Medicine, designates this disease paruria inops. Dr. Elliotson, in his lectures, (Medical Gazette, vol xii.) speaks of it under the title of ischuria; and Dr. Willis has well described it by the name of anuria, or anuria

apyretica: in truth, so many are the titles given to it, so obscure the symptoms marking its approach in the first instance—aye, even its existence, in the earlier stages—that we may not inaptly observe, with Virgil, that "the disease lives by being concealed." The disease is not one of very frequent occurrence. Dr. Elliotson remarks, "he has only seen one case," and that occurred after the patient had taken a quantity of corrosive sublimate by mistake: by proper treatment the man recovered, but, after some days, was attacked with anuria, attended by hemiplegia, and that drowsiness which is always present after suppression of urine has continued for some time. From this we may infer—that is to say, from the apoplectic symptoms ushering in death—the urine is resecreted into the ventricles of the brain; but in the case at present under consideration, nothing of this kind was discovered; "there was not only no urine in the head, but no excess of fluid either in or upon the brain:" a result for which the doctor was evidently unprepared. Dr. Bright, in his valuable Researches into Diseases of the Urinary Organs, remarks, "that in cases of granular degeneration of the kidneys, total suppression of urine but seldom occurs." There is, however, no doubt but that various states of the system, both in health and also in disease, have an effect upon the secretion of this fluid, which I regard as composed of certain elements, the longer continuance of which in the blood than natural, is always attended by disease, and the total suppression of their elimination, by death; the last stages of the patient's life being marked by symptoms which denote an affection of the brain. Respiratory and intestinal exalations, as well as cutaneous transpiration, more or less influence the functions of the kidneys. Copious dejections from one or more of these surfaces diminish the quantity of urine, and the opposite states never fail to produce a contrary effect. In fever, in small-pox, after accidents and surgical operations, we have (more or less, as the case may be) a diminution of the secretion of urine. Again, after injuries of the spine in the region of the kidneys (or tubercular disease of the cord), we have frequently retention of urine, with considerable febrile excitement. But besides an inability of voiding the urine, Sir B. Brodie has frequently pointed out a marked diminution of the quantity secreted. In some cases the urine first secreted, although of an acid quality and free from mucus, has a very offen-

sive odour; in other cases I have remarked its peculiar acid nature, its opaque appearance, and yellow amorphous sediment. I regard, however, the most common change to consist in the peculiar ammoniacal smell, and the deposit of a large quantity of adhesive mucus: the urine when tested with reddened litmus or turmeric paper, is found to be very alkaline. After some time, phosphate of lime, secreted by the inner coat of the bladder, is blended with the mucus, which is tinged with blood. Such a state of things may be produced in three or four days after the accident, or they may not come on for a week: in one case, I remember, it was nine or ten days after the injury had been received, that they were apparent. I am not aware that one part of the spine, when injured, is more liable to produce them than another. In fatal cases they remain to the last; in others which recover, they perhaps go on for three or four weeks. There is another peculiarity, also, to which my attention was first directed by that justly celebrated surgeon (during the time I was his pupil, at St. George's Hospital) Sir B. Brodie, which consists in the variation which takes place in the state of the urine; to day it may be alkaline, depositing adhesive matter; the next, we may find it clear and acid; and the day after alkaline again. Suppose, however, that the spine becomes injured, and that very little disturbance at the time takes place—so little, in fact, that it may be overlooked; after some days, the patient is attacked with paraplegia, followed by gangrene of the nates and retention of urine; but perhaps after a week, or even a longer period, the quantity secreted is diminished, and at length ceases altogether, when fatal coma terminates the existence of the sufferer—terminates an existence deplorable in the extreme. The peculiar suppression of urine in cases of malignant cholera is well known to all who have attended cases of that singular and fatal disease. But independent of acute disease—independent of any derangement that is apparent in the structure of the kidneys—their secreting office is completely suspended. This morbid condition constitutes the disease which Dr. Willis has named anuria; said by him to terminate in coma in four or five days, and in death in a few days more. I am of opinion, however, that in complete suppression of urine, death takes place in a much shorter period; in some cases, in less than forty-eight hours. All cases end in coma; some with, others without, con-

vulsions, but all have evident symptoms of apoplexy. Notwithstanding this disease is said to be of "rare occurrence," I am inclined to think that such is not the case; the symptoms are so masked that the patient may die without the true nature of the complaint being discovered; nor am I aware that, until late years, the profession have very particularly directed their attention to it. Suppression of urine may be divided into two stages:—1st, when the suppression is partial, and 2dly, when it is complete.

1st. *Cases in which we have a Partial Suppression of Urine.*—Such cases are far from unfrequent. A patient exposes himself to a cold atmosphere—remains loitering about in his garden, for example, on a cold November day. In the evening he complains of having taken cold, creeps to the fire, and has frequent rigors. He retires to bed; his skin is hot and dry; his urine scanty and high-coloured; his tongue, the next morning, is coated; perhaps the bowels are confined. This scanty secretion of urine not unfrequently continues for some days, although the patient feels better, having been relieved by copious evacuations from the bowels and continued perspiration. Dr. Parr relates a case in his own practice in which no urine was secreted for six or seven weeks; and the case of a boy of seventeen is mentioned by Dr. Richardson, who had never made water from his birth, nor had felt the least uneasiness on this account, being healthy, vigorous, and particularly active. Haller also has given us some account of a case (Bibl. Med. Pr. ii. p. 200,) that lasted for twenty-two weeks. He does not, however, give it upon his own authority; it was probably related to him by another, and, I think, is little to be depended on: it is folly to suppose that the constituent principles of so important a secretion as the urine can long continue in the blood—can long float in the system, and load the blood without the greatest danger. "The outlet," says Dr. Mason Good, "at which these are separated and discharged is not always manifest, and hence they appear not to be separated at all." If however, a minute observer—a practical and accurate pathologist, makes the examination, the vicarious channel will always be detected. The two great outlets which serve instead of the kidneys are the bowels and the skin. Dr. Parr informs us that in the case just quoted there was a profuse sweat; he does not, however, give any account of the state of the bowels. In Dr. Richardson's case,

he admits that the young lad laboured under constant diarrhœa. Dr. Samuel Arnold, in the "New England Journal of Medicine and Surgery," mentions the case of a young woman who had a retention of urine for two years, and through the integuments of whose lumbar region a fluid like urine escaped. On one occasion she was not relieved by the catheter for seventy-two hours, when a fluid, like urine, was discharged, first in drops, and then in a larger quantity from the right ear. This patient vomited a fluid like urine, and, on one occasion, a fluid oozed from the navel. The fluid was on all occasions found to contain urea. During a period of several years, whenever the discharge diminished (that is, when the kidneys refused to secrete), the patient was attacked with delirium, and occasionally with violent spasms like those of opisthotonos. M. Andral infers that the blood "contains, in variable proportions, the elements of all the secretions; that, under ordinary circumstances, these elements are separated from the circulation only by those organs whose special structure is adapted to bring about such separation; but, under particular states, these elements may be separated from the circulation by other channels than those regularly intended for the purpose; not, indeed, in the condition of perfect secretions, but in a more simple form, containing the elements of such secretions."*

I shall not here speak of the treatment necessary in cases where we have only a partial suppression of urine, as that will be best considered when we examine—

2*d*. *The Symptoms and Treatment of complete Suppression*

* When this paper was published in the Medical Gazette, some years ago, I was favored with the following note from Sir B. Brodie, which contains some valuable information.—"I have read your paper on suppression of the secretion of urine, in the Medical Gazette, with much interest. In the great majority of cases of this kind that I have seen, there has been some obstruction to the flow of urine; and it is curious that a calculus blocking up one ureter, or a tumor pressing on one ureter, will sometimes stop the secretion of urine in both kidneys. In one case there was a very enlarged prostrate, which probably closed the orifices of the ureters, but the body was not examined after death. In another case there was a medullary fungus of the mucous membrane of the bladder producing this effect. I had a patient with enlarged prostate which prevented him emptying the bladder. For some time he had not secreted more than half a pint of urine daily. But the secretion immediately was trebled on the catheter being used 2 or 3 times daily. * * Yours very truly, B. C. Brodie.

of this Fluid.—The great and urgent danger of this complaint was first made known by Sir H. Halford, who has communicated some valuable observations upon the subject.

Case xxxvi.—"A corpulent and robust farmer, of about fifty-five years of age, was seized with a rigor which induced him to send for his apothecary. He had not made water it appeared for twenty-four hours; but there was no pain, no sense of weight in the loins, no distension of the abdomen, and, therefore no alarm was taken till the following morning, when it was thought proper to introduce the catheter and none was found. I was then called, and another examination made in the afternoon by one of the most experienced surgeons in London, whether the bladder contained any urine or not, when it appeared clearly that there was none. The patient sat up in bed and conversed as usual, complaining of nausea, but of nothing material in his own view; and I remember his friends expressed their surprise that so much importance should be attached to so little apparent illness. The patient's pulse was, at times slower than usual: at others, the patient was heavy and oppressed. I ventured to say, that if we did not make the kidneys act, he would soon become comatose, and would probably die in the following night, this being the course of the malady in every other instance which I had seen. It happened so: he died in thirty hours after this, in a state of stupefaction."—(Vide *Med. Trans.* vol. vi.)

Since the above was written, I have read Dr. Baillie's valuable work, who appears to bear me out in the division here made between cases where the discharge is altogether wanting, and others in which it is evident that a small quantity is secreted; for he observes, "here there is a great difference in the hazard of a patient's situation, whether the kidneys separate a very little urine, or none at all: in the first case he gradually recovers; in the second, very rarely."

The symptoms of a total suppression of urine are frequently very obscure. The disease is often far advanced before the surgeon is aware of it; the patient often may be going about his work in the morning, and, in a short period afterwards, be dead. Mr. Campbell has recorded three very interesting cases in the Lancet. The first, of a stout man, somewhat above sixty. He found him feeding his cattle out of doors, thinking little was the matter. On

introducing a catheter, no water was found in the bladder. On being more closely questioned, he complained of some pain about his back. The next day he died comatose.

From the fatal character of this disease, it is of great importance to detect its approach in the first instance. It may be inflammatory, and then we have symptoms of nephritis. But the case is seldom so clear as this. You find a man following his usual occupation: he sends for you to draw off his water; and you discover none in the bladder on the introduction of the catheter. There is a dull uneasy sensation about the loins; a feeling of oppression at the pit of the stomach; a disinclination to move from place to place; a loathing of food. These symptoms are followed by rigors, pain in the head, and drowsiness, ending in coma and death.

The effects then of a suppression of urine consist in a declining energy and a growing torpitude in every function, clearly showing that the brain is directly weakened and rendered incapable of supplying nervous energy. Again, says the writer before quoted, "it is not difficult to account for these effects, since they naturally follow from the blood being overcharged with that excess of azote which it is the office of the urine to carry off:" the destructive power of this agent is known to every one, as is also its further power of increasing the "coagulability of the blood." M. C. Chossat has made some highly interesting experiments (to which I must refer the reader), to decide whether the blood of persons afflicted with anuria be loaded with azote; but this is a question on which I cannot take upon myself to give an opinion; we can regard nothing concerning it as certain until proved by chymical experiment. Suppression of urine may of course be either functional or arise from some organic disease of the gland itself; the symptoms, however, do not vary in either case, and death takes place, according to my experience, in exactly the same manner. I remember attending a case of organic disease of the kidneys, with Messrs. Carrick and Pollock, of Kensington, in which for the last week no urine was secreted.

Case xxxvii.—Mrs. D——, of Newland Street, Kensington, was attacked about six months ago with pain in the hip and loins; pulse quick; urine scanty and high coloured. Notwithstanding the treatment adopted she got gradually worse. October 1st, 1837.—I again saw her: the urine was now fœtid and of a dark

colour, often containing long strings of blood: she complained of great pain in the loins, which would not allow her any rest night or day. These symptoms continued until the last five or six days of her existence; her headache then increased; the urine ceased to be secreted; none was passed, nor did the catheter detect any in the bladder; she now became comatose, and died on the 14th of October. Twelve hours after death, I assisted Mr. Pollock in making a post-mortem examination: we found both kidneys diseased, particularly the right, which was one fungoid mass.

My attention, however, has been more particularly directed to this complaint, by the following interesting case, in which there was for many hours a total suppression of urine, yet the man recovered: and is now enabled to attend to the duties of his station.

Case XXXVIII.—I was summoned to attend Joseph Lambert, æt. 27. He is rather below the middle height, thick set and stout; his neck is short, his complexion florid; he is under-gamekeeper to Earl Spencer, and often exposed to cold and wet.

March 18th, 1840.—He called upon me this morning, and complained of pain at the pit of the stomach; his bowels were relaxed; which he supposed to arise from eating a quantity of new bread last night, and drinking for the last week past more ale than usual; tongue moist; pulse 90; urine high coloured (but does not make less than usual); no headache; has not been of late exposed to cold or rain; "would be quite well if it were not for the dull heavy pain in his stomach."

℞ Ol. Ricini, ʒi; Tr. Opii, mxx. statim.

He came to me again in the evening, saying, "he was no better;" the bowels had only acted once slightly, since the oil was exhibited: does not think the pain and uneasiness quite so severe as in the morning.

℞ Ext. Colocynthidis, gr. viij; Hydrarg. Chloridi, gr. ij. M. fl. pil. ij, statim sumendæ.

10 o'clock, P.M.—Has sent to say that he is much better.

19th.—I called to see him this morning at nine o'clock, and found him walking about in great pain; his face much flushed; tongue coated; pulse 120, quick and full. He had felt better till this morning: about seven o'clock, feeling uneasy, he got up to make water, and could only void a few drops: has not passed any urine for the last eighteen or twenty hours: upon placing the hand

above the pubes, it was at once evident that the bladder was not distended; a teaspoonful of very acid urine (all he had passed) was shewn to me. The true nature of the formidable disease we had to contend against, was now apparent, and the introduction of the catheter confirmed my worst fears; not one drop of water came away. Upon examining him more closely, he said the pain in the loins was at times very severe; this was succeeded by a dull, heavy, continued, uneasy sensation, not amounting to actual pain—to use his own words, "as though the small of his back was half broken; the eye was dull and heavy, the pupils considerably dilated; he complained also of slight drowsiness and pain in the head: "would go and get some sleep, as he thought bed the best place for him."

V.S. ad ℥xvj.

The blood drawn was dark, thick, and tar-like; since the bleeding, has had a motion, which is pale and watery, the secretion of bile being evidently diminished. He was ordered to drink freely of linseed tea, to put his feet into warm water, to have a warm bath as soon as possible, and not to think of leaving his bed; the feet being cold, mustard poultices were applied to them.

℞ Hydrarg. Chloridi, gr. viij; Pulv. Lyttæ, gr. j; Ol. Tiglii, ♏iv; Ext. Hyoscyami, gr. iv. Misce et divide in pil. iv. Sumat 1, quaque tertia hora.

℞ Sodæ Sesqui-carbonatis, ℥j; Pulv. Potass. Nitratis, ℈j; Tr. Hyoscyami, ℥ij; Tr. Scyllæ, ℥j; Tr. Lyttæ, ℥j; Mist. Camphoræ, ℥vss. M. Capiat coch. larga duo quaque quarta hora.

℞ Ol. Terebinthinæ, ℥ss; Spir. Camphoræ, ℥j; Lint. Saponis, ℥iss. M. Fiat embrocatio, lumbis applicenda.

This was rubbed upon the loins frequently during the afternoon.

3 o'clock, P.M.—The medicine has produced two watery evacuations; complains of much pain in the head, and a dull heavy pain in the loins; pupils slightly dilated.

A large blister to the loins.

6, P.M.—Pupils much dilated; complains of more pain in the head; answers questions in a sharp quick manner, and is evidently becoming delirious. Wonders why I come to see him so often.

12 o'clock.—No better; has had two more evacuations, but has not passed any water. I now left him for the night, with directions to be called if any change for the worse took place.

20th, 9, A.M.—Has passed a bad night. Face flushed; pupils still dilated; complains of great thirst; the skin is still hot and

dry; pulse 90, slow and labouring. I introduced the catheter, and drew off about two ounces of water—all that had been voided for forty-two hours.

℞ Pulv. Jacobi, gr. iv; Hydrarg. Chloridi, gr. ij. M. ft. pulv. statim sumendus.

℞ Spir. Junip., ʒij; Muc. Trag. co., ʒiv; Tr. Humuli, ʒij; Magn. Sulphatis, ʒi; Aquæ, ʒviiss. M. Capiat coch. ij ampla quaque 4ta hora.

12 o'clock.—Repet. Pulv. Jacobi, gr. vi. To drink freely of warm linseed tea; to put the feet into warm water; to keep the head cool. The bowels have been very freely opened.

9 o'clock, P.M.—Decidedly better; skin moist; pulse 72. Had made about three ounces of water since morning.

℞ Pulv. Ant. Potass. Tart., gr. i; Magn. Sulphatis, ʒij; Tr. Lyttæ, ʒj; Syr. Tolutani, ʒss; Aquæ, ʒvss. M. Sumat coch. ij ampla quaque secunda hora.

21st.—The only food he has taken since I was called to attend him has been linseed tea. This morning he is much better; less pain in the head; no pain in the loins; skin moist; pulse 82. Bowels well opened during the night; the secretion of bile evidently increased. To continue the mixture containing the antimony. He had passed since my last visit about ten ounces of urine.

22nd.—Improving. Still complains of a dull heavy pain in the loins; urine scanty, and high coloured.

23rd—Much better. No pain in the loins; the urine gradually increasing in quantity. Has taken to-day a small bit of toast, the first solid food since he became ill. The pain in the head has quite left him.

℞ Magn. Sulphatis, ʒj; Potass. Bi-tartratis. ʒss; Spir. Eth. Nit., ʒij; Infusi Sennæ, ʒvi. Capiat coch. ij ampla nocte maneque.

℞ Hydrarg. Bichloridi, gr. ¼; Ext. Conii, gr. x; Camphoræ, gr. viij. M. ft. pil. viij. Sumat ij hora somni omni nocte.

25th—Much better. To take one ounce of castor oil when the bowels become confined.

I know of no other symptoms that need be recorded. He got daily better; is now able, as before stated, to attend to his duties, and to support a wife and young family.

Case xxxix.—Mr. W. H——, æt. 40, a farmer, of rather full habit and large stature, but a very temperate man, called some time ago upon a surgeon, having walked a distance of nearly five miles. He complains of being "generally unwell;" the bowels are confined; has not passed any urine yesterday, or during the

night; the pulse is slow and full. On passing the catheter, the bladder was found to contain only about two tea-spoon-fuls of urine.

V.S. ʒxx.; calomel and saline aperients; an embrocation to the loins.

May 5th.—Bowels freely opened; pulse the same as yesterday; has passed a small quantity of urine.

7th.—Better in every respect. He got gradually well, but never was able to void a natural quantity of urine until he remained some time at Buxton, making frequent use of warm baths. He never had any of the pain, or sense of weight in the loins, that I have described; in truth, so little did his malady appear to affect him, that his friends generally laughed at the fears of his medical attendant. The case, however, I regard as one belonging to the first division of my subject.

Lastly, we have to examine—

The Treatment of Suppression of Urine.—In our treatment of disease, we ever learn a lesson from the efforts made by nature to repair the injuries that disease or accident has made. Here, too, we may take a valuable hint from her; for as the excretories of the skin and kidneys are continually assisting each other in almost every possible way, we must endeavour, first, to excite the former by active diaphoretics, to take upon themselves (for a time at least) the office of the latter, and thus carry off the urine that should be discharged by the kidneys; secondly, we must endeavour to restore the kidneys to their usual natural action by diuretics and saline purgatives. The most useful I have already endeavoured to detail in the treatment of Lambert's case. Digitalis has been recommended, but I am inclined to think that it is of little use; and if at all so, only when combined with cantharides, or some other diuretic. A large blister should always be applied to the loins, and cantharides given internally. It is better to give this medicine in the solid form, as the tincture is frequently useless. A large dose is required, as in cases of this nature, no time must be lost.

CHAPTER VIII.

CASE OF UTERINE HÆMORRHAGE,

IN WHICH THE PLACENTA WAS SITUATED OVER THE OS UTERI.

"Hæc menorrhagiæ species est periculosissima nullo remedio, sed sola extractione fœtus curanda."—*Plenck.*

On Monday, October 18th, I received a note from Mr. Jackson, a surgeon residing at Bawtry, requesting me to see Mrs. F——, of Stone Hill, a patient of his, at that time suffering from uterine hæmorrhage. I found her weak, from continued flooding, which she said had commenced, for the first time, about a fortnight ago. On stooping down she discovered a small discharge, which appeared to be blood, coming from the vagina: this had continued more or less since that period. She supposed she was in her seventh month of pregnancy. She was the mother of six healthy children. The loss of blood had evidently been very great; and it appeared clear to me that if she was not speedily delivered, nothing could prolong life. On introducing the finger, I found the os uteri, notwithstanding this great loss of blood, rigid, and not sufficiently dilated to admit the point of the finger. I did not, however consider this (and my friend agreed with me) a case in which it would be prudent to trust to plugging the vagina with sponge or a silk handkerchief; for, although we might have commanded the flooding externally, we could not have prevented the flooding internally. Dr. Burns remarks, "there are instances on record, and these instances ought to be constantly remembered, where the blood has collected within the uterus, which, having lost all power, has become relaxed, and, being slowly enlarged with coagula, the strength has decreased, the bowels become inflated, the belly swelled beyond its size in the ninth month, although the patient may not have been near that period, and, under these circumstances, when an inattentive practitioner has,

perhaps, concluded that all was well with regard to the hæmorrhage, the patient has expired, or only lived long enough to have the child extracted."

I am not prepared to fix a rule, which the experience of the best men of the past and present age have agreed to adopt, in cases like the present, in which, although much blood has been lost, the parts are still rigid. Plenck directs the child to be delivered by turning: "quamprimum uteri orificium adeo hiat, ut duo digiti inferri possint." We must, however, duly and carefully consider the case in all its bearings, the quantity of blood lost, the strength of the patient, and the actual state of the part: these things must be fully taken into review, and we must act accordingly. The advice of Dr. Burns is highly important. He remarks, "although I have said that we may wait safely until the os uteri begins to open, and asserted that no woman can die from mere hæmorrhage before the state of the os uteri admits of delivery, I must yet add on this important subject, that this state does not consist merely in dilatation; for it may be very little dilated, and yet in a state of dilatability."

After some little time, Mrs. F—— again complained of a fresh attack of flooding, and a second examination was instituted. With some little difficulty the finger was made to pass within the os uteri. From the removal of the coagulated blood the hæmorrhage became a little more profuse, and I was enabled to detect the placenta. When the placenta presents, it can easily be distinguished from the clotted blood by its firm, fibrous structure, and by its being attached at one part of the uterus, and separated at another. My old friend and teacher, Dr. R. Lee, of St. George's Hospital—whose pupil it was my good fortune to be for some years—in his valuable work on "Some of the most Important Diseases of Women," page 207, remarks, "it may be laid down as a rule admitting of no exception, that where hæmorrhage occurs from the placenta being situated over the os uteri, artificial delivery must be performed." Remembering this advice, I proposed to my friend, Mr. Jackson, that we should at once proceed to the delivery of our patient. This I effected in the following manner:—I gently dilated the os uteri, until my hand could be admitted, in a conical form, between the uterus and the placenta, and passed it very gently upwards at the part where the separa-

tion had already taken place. I then ruptured the membranes, and had the mortification to find that the hand presented. This, however, was returned, the inferior extremity of the child brought down, and the fœtus and placenta slowly extracted. I would here venture to add that the plug ought never to be employed when the os uteri is soft and yielding; for if the uterus is in a condition to be emptied of its contents, the sooner it is done the better; and I am fully convinced that more cases are lost by delaying too long, than resorting to this operation as soon as possible.

I am happy to add, in the present case, that the unfortunate sufferer, though weak and exhausted from the great loss of blood, ultimately recovered.

CASE XL.—Mrs. Loveday of Earl's Court, Kensington, æt. 35, mother of six children, was suddenly attacked with considerable hæmorrhage during the seventh month of pregnancy. At the time she was first seen the hæmorrhage had continued four hours. The os uteri was soft and dilated to the size of a shilling; the placenta presented. In about half an hour the flooding increased, and the os uteri yielded sufficiently to allow the careful introduction of the hand. The breach presenting, the feet were easily brought down, and the patient delivered of a dead child. This lady completely recovered.

CASE XLI.—This case, abridged from the valuable work of Dr. Merriman, well illustrates the danger of delay in cases of "unavoidable uterine hæmorrhage." Mrs. J—, when between seven and eight months advanced in pregnancy (her ninth) had a slight degree of hæmorrhage, which did not return until after she had completed her eighth month. It then became so profuse that she sent for her accoucheur, who concluded, from the fulness and thickness of the parts interposed between his finger and the head of the child, that the placenta was attached to the cervix uteri. Every possible means were taken to prevent an increase of the hæmorrhage, and the nurse and friends strictly charged to send without delay on any return of the flooding. Several days elapsed without any cause of alarm; but, on the 28th of January, it returned, and was profuse at times. She wished to send for her medical attendant; but the women about her said he could do no good without pains. By this very absurd reasoning she was prevented seeking timely relief. Towards morning she suddenly

became so faint and sinking as to alarm every one about her. A very urgent messuage was now sent to Mr. P—, (the surgeon who was to attend her), who hastened to render every assistance; but she ceased to exist before he reached her home.

I have spoken of the manner in which turning is to be effected in these different cases. The child must be reached by passing the hand between the uterus and the detached placenta, and not, as some writers say, "through the placenta." In truth, it is no easy matter to do so, even if such a plan were advisable. The advantages of the former plan are many:—

1. Much less violence is done to the connection of the placenta with the uterus, and thus the risk of increased hæmorrhage is prevented.

2. Much time and labour are saved.

3. We can command the descent of the feet with greater certainty.

4. We may prevent the atony of the uterus by allowing the waters to escape gradually, and at will.

5. We prevent the child from being entangled in the placenta, and this does away with the inconvenience which would arise from the increase of bulk, as in the former method the size of the placenta is added to that of the child.

6. It prevents the violent and sudden separation of the placenta from the uterus.

Much learned discussion has arisen as to the discovery of this important disease. It was known in 1683 to Paul Portal that the placenta sometimes adhered to the internal orifice of the uterus. Similar cases were mentioned by Petit. Dr. R. Lee is of opinion, that we are indebted to Levret for the first accurate account of the treatment of uterine hæmorrhage depending on the attachment of the placenta to the circumference of the cervix uteri. His first work is dated 1753. The first edition of Dr. Rigby's Essay on Uterine Hæmorrhage was published in 1776, exactly twenty-three years after the memoir of Levret.

A case of unavoidable uterine hæmorrhage might occur (Dr. Lee relates one) in a woman with a deformed pelvis; such as Smellie describes in his xxviii. plate, p. 159, where the head, although compressed to only three inches in diameter, from one parietal protuberance to another, was still too bulky to pass.

In such a deformed state of the pelvis it is manifest that no full-grown child can be expelled, and it becomes our duty to take steps for the expulsion of the fœtus before it is sufficiently large to endanger the life of its unhappy parent.

CHAPTER IX.

GOUT* AND RHEUMATISM.

1st. *Gout.*—On no subject has empiricism been more assiduously and more mischievously pursued than in the treatment of gout. The truth is, the majority of cases of gout we are called to attend are chronic, and the remark I am about to make applies not only to gout, but to other diseases of long standing; viz. that not one chronic disease in twenty can be entirely removed, and all we can hope for is to produce some mitigation of suffering. Thus, when a patient has again and again been attacked with gout, a complete cure is altogether out of the question, although we have it in our power, in a great degree, to shorten the gouty paroxism, by proper remedies, which not only act specifically but also correct that state of the constitution which ministers to it; and also by attention to diet, the period of exemption may be considerably prolonged and those disorganizations, which severe, protracted, and repeatedly renewed gout, sooner or later produces, prevented; nor is this all: those fearful consequences may be averted which arise when the gouty action extends to vital organs. When persons have the disease for a great length of time, and it is either unrelieved or maltreated some internal organ very commonly be-

* Gout is derived from the latin word *gutta* a drop. In latin it is now generally spoken of as *arthritis*, by the older writers it was termed *podagra*, when it attacked the feet, *chirayra*, when it attacked the hands, and *gonagra*, when it attacked the knees.

comes affected; the gout is no longer confined to the hands or feet, but the organs in one of the three great cavities of the body become diseased, and then this affection may be regarded as one of the most formidable attacking the human frame. The regular practitioner cannot in this, more than in any other chronic affection, hold out hope of cure; he cannot cure consumption, or cancer, or tic douloureux; and what is the consequence? the patient is not satisfied with anything short of the assurance that the disease can be completely removed—the honest assertion of that able physician, Dr. James Johnson, "those who have seen most of human maladies are well aware that the causes of chronic disease, as the very word (chronic from chronos time) imports, are slow and gradual in implanting themselves in the constitution and when once fixed are equally if not more slow in their removal; not one in ten can be cured, and the most we can expect is a mitigation of suffering," is disregarded: all this may be very well, says the sufferer, but I hear a book has been written and a man found to prove "*consumption curable*," and that, if not in England, in Germany every thing yields to the application of cold water; dying men catch at straws and therefore we are quite prepared to find the multitude following that man, who promises the most,—to see princes and princesses, young and old, rich and poor, without thought, without reflection, hastening to become devotées of this modern Ganges, and plunging into the Bethesda of Gräfenberg—truly Vincent Priessnitz thou art an angel, and mightily hast thou troubled the waters of thy native pool. Cold water is now the grand cure for the gout, "it is in chronic diseases that *hydropathy* flourishes and its disciples exult, and yet it is in this very class of affections that the water cure produces what its name implies, the WATER DISEASE, and slays its thousands —not indeed in open manner, but in a slow, insidious, and masked character, when the victim is totally unconscious of the precipice to which he is advancing and over which he will inevitably be hurled."* There are many diseases, the seeds of which may, have been for years accumulating, which, though altogether constitutional, are nevertheless of a migratory character, sometimes appearing in the hand and at another in the foot; sometimes

* Excursions to some of the Principal Mineral Waters of England by J. Johnson, M.D.

shifting their seat from an internal to an external, and comparatively unimportant organ; hence gout was formerly much desired, as it is a very common thing for persons who have suffered in various ways, to be much relieved after an attack of gout. It is a fact, which cannot be denied, that when gout or rheumatism is suddenly made to leave a joint either spontaneously or by the assistance of medicine, some internal organ is attacked, and as the new seat of the disease is not necessarily a sensitive part, the metastasis is lauded as a cure; the unconscious victim remains in the most happy security, until the internal affection has reached a certain height, and then the disease is developed, but it is now too late to think of a cure, the disease being beyond the power of art. Now if men would take the trouble to act and think for themselves, they would see that nature endeavours to counteract the effects of certain morbid actions arising in internal organs by throwing the onus on external parts, as familiarly illustrated in *gout*. But if these salutary effects are prevented, if we violently repel the pain, check the inflammatory action, and remove the swelling in the hands and feet by ice-cold water or evaporating lotions, sooner or later some internal organ is attacked and the unhappy patient hurried into eternity. I quite agree with Dr. Johnson that in this drama *Hydropathy* is now playing an important part. "*We are*," says he, "*daily in the habit of seeing the precious fruits of the water cure in the shape of furuncles, carbuncles, dropsy, and hypertrophy of the heart, internal abscesses, and other grave consequences. These however will not be heeded—at least they will not make much impression on the public 'till some great personage dies suddenly under the Hydropathic process, when the bubble will burst and the* WATER CURE *shrink within its rational and salutary boundaries.*" By salutary boundaries this experienced writer, means, that the dyspeptic, hypochondriacal, and nervous, will be much benefited—by a total abstinence from wine and other stimulants, vigorous exercise, and the internal and external use of cold water, which proves more efficacious than indolence and repletion at home. But the Doctor earnestly cautions all who are suffering from gout, erysipelas, tic douloureux, or any migratory disease to beware of WET SHEETS, the PLUNGE INTO COLD WATER, while perspiring, and the enormous ingurgitation of cold water, if they wish to avoid

enlargement of the heart, chronic inflammation of the lungs, congestion of the liver, "dropsy of the chest, or the disease of Job."

One of the most important disorders of the secreting function is produced by a superabundance of lithic acid in the urine. This excess can only be present where a too great proportion is contained in the blood from which it is secreted, and to this continued increase the various phenomena of gout and rheumatism may be referred. This being the case, the first rule of practice is to prevent its accumulation, or hold it in solution that it may pass with the urine without pain or difficulty; the question at once suggested by this enquiry will be, how is lithic acid formed? and all chymists and physicians are agreed that lithic acid is a product formed of the disintegrated albuminous or gelatinous tissues, which having performed the purposes of their creation become changed in their composition and resolve themselves into different combinations of the same elements;* this change can only be produced when oxygen is present and the supply is obtained by respiration. Now as lithic acid is less highly oxygenized than urea Professor Liebig contends, "that an excess of lithic acid is the result of an imperfect oxygenation of the decomposed tissues, and that a more perfect oxygenation will convert the whole, or greater portion of the lithic acid into urea." Without repeating the many objections that have been raised to this opinion of Liebig, I shall take the liberty of making an extract from the Review of Dr. Forbes, which I met with after the greater part of this chapter was ready for the press:—

"*What proof*," says he, "*can be given that all the azotized matter of the urine is derived from the disintegration of the animal tissues?* We are informed by Liebig that it is so; and he even goes so far as to state that the amount of azotized matter in the urine may be regarded as a measure of the decomposition which takes place in the azotized tissues. But it may be asked, how is this to be substantiated? If we suppose that no more nutriment is received into the system than is requisite to supply its wants we can readily admit that no azotized matter will pass into the urine until it has performed its part in the solid structure. But if there be a surplus, either in consequence of an increase in the quantity of food, or a diminution in the demand, there would be an accumulation of the nutrient materials of the blood, if means were not adopted to prevent it; among the lower animals we apprehend such a superabundance will seldom occur. Far different is the case with the lords of the

* See a very able paper in Dr. Forbes's Medical Review, No. xxx.

creation; the gratification of the palate, not the satisfaction of the natural appetite, is too often the object of desire; a heavy reckoning is thus prepared for a subsequent day; and who shall say that the punishment is not deserved."

It appears clear enough that if a greater portion of non-azotized food is received into the system than the lungs can dispose of, it is deposited as fat. But we have yet to make enquiry after the azotized substances; they do not go to increase the muscles; on the contrary, the nutrition of the muscular textures of the body is occasioned by the very cause which produces its disintegration. Every one is aware of the effect of exercise in augmenting the growth of the muscular tissues and thus it serves in two ways to prevent the accumulation of azotized substances in the blood:—

"But will Professor Liebig," continues the writer just quoted, "tell us, when high feeding and inactive habits are combined how these substances are disposed of, except by passing in an altered condition, into the urine? It is very possible that in consequence of primary mal-assimilation (as Dr. Prout calls it) resulting from a disordered state of the digestive organs, these matters never could have been appropriated by the tissues, and hence they must either have accumulated in the blood, or be separated by a secreting process. But we cannot see how the truly assimilable matter can be disposed of except by a similar mode." [page 501.]

When the body is in a healthy condition there is no waste, because the whole of the fibrin of the blood goes to supply the demand; but when the supply is far greater than the demand, the excess can only be removed by the excretory organs, namely, the skin and kidneys. I fear we must admit, ready as we are to acknowledge our obligations to modern chymists, that it is too much the fashion of the nineteenth century to regard the human stomach as a jar, into which certain substances have only to be thrown to ensure inevitable results; for my own part I have not the slightest objection to their continuing to treat the human frame as a chymical laboratory, but it may not be out of place to most respectfully remind them that it is a LIVING ONE. Still it appears from the experiments of Dr. Golding Bird, that the theory of Liebeg, when tested by the standard of observation, is altogether incorrect.

For if his theory be true, we ought to find the urea diminished and the uric acid increased, where there is a deficient oxygenation; and that in consumption where the oxygenation is excessive, the uric acid should altogether disappear, a glance at the following table proves that this is not the case.

Disease.	Quantity in 24 hours of Uric Acid.	Quantity in 24 hours of Urea.	Proportion of Uric Acid to Urea.
	Grains.	Grains.	
Healthy urine (general average)	8·1	255	1 : 30·37
Chlorosis, minimum of five cases	1·8	77·5	1 : 43
Chlorosis, maximum of five cases	6·0	172	1 : 29
Pulmonary emphysema with extreme dyspnœa	4·9	172	1 : 35·1
Phthisis, tubercles softened	9·1	66·7	1 : 7·33
Phthisis, three days before death	9·8	29·4	1 : 3
Morbis cordis, with jaundice	9·82	73·3	1 : 7·6
Acute hepatitis, with jaundice	11·18	61·6	1 : 5 6
Jaundice	17·75	285·6	1 : 16·1
Milk-fever	19	133	1 : 7·47

Dr. Bence Jones and the disciples of Liebig cure the uric acid diathesis in the following manner: 1st, *by giving a large supply of oxygen, as by exercise, by cold air, by nitrous oxide water, and by iron.* 2nd, *by diminishing the quantity of other substances on which the oxygen acts more readily than on the uric acid; that is, substances consisting of hydrogen, oxygen, and carbon only—by abstaining from these as food, by removing them by aperients and sudorifics.* 3rd, *by keeping all the uric acid in solution by aperients and sudorifics.* Now, however correct these rules may be in part, they are not so as a whole—all admit the advantage of exercise carried to a great extent, without depressing the vital powers; [I attended a patient not long ago in whom severe indisposition followed the carrying out of this system beyond his strength.] But the principal objection has been, and must now again be, raised, to the kind of diet most useful in the lithic acid diathesis. I have at this moment a patient under my care who has been a sufferer for years, from the lithic acid diathesis, and who has had the benefit of Dr. Prout's valuable assistance. All the medicine that could be thought of proved useless so long as he indulged in animal food three times daily; but as soon as he was restricted to a small quantity of meat once a day, the disease disappeared without the exhibition of medicine, was re-produced by a return to his former habits, and again removed by abstaining from this large quantity of animal food. It is well known that the greatest success has attended the treatment of the lithic acid diathesis, by thus confining the patient to farinaceous substances, and giving only a small quantity of animal food; this treatment was founded on the idea that no-

thing was more likely to diminish the product, than taking away the supply, and I am quite certain that I have again and again experienced the value of this treatment in practice. On taking up the admirable work of Dr. Graves, I found him asking, "who ever heard of a case of gout amongst the potato-eating peasantry of Ireland?" and Dr. Forbes mentions a case in which no decided relief was obtained until the patient was restricted to the Hindoo diet of rice and capsicums; how very unfortunate that nature will not adapt her maxims to suit the ingenuity of man; how truly unfortunate it is that in this most beautiful theory of Liebig one thing is needful, viz. a confirmation by facts—why, in the instance recorded in Dr. Forbes's publication, the patient according to this theory of Liebig, ought to have expired at once, the rice diet ought to have produced the most dreadful aggravation, rather than a cure.

"When," says the reviewer already quoted, "we are shewn what becomes of the azotized matter in the body of a man who eats twice as much as his inert system requires for its reparation, we may begin to open our understandings to this theory; but at present they are obscured by a cloud which our unaided common sense cannot disperse. *If this were the true explanation gout would be one of the commonest diseases of the ill-fed labouring population, and comparatively rare in the luxurious aristocrat.*"

Treatment of Gout.—Dr. Prout remarks that lithic acid developed principally during the mal-assimilation of the albuminous textures may be considered as the characteristic feature of gout; and it is admitted, 1st—that gout is an heriditary disorder and that some part or other of the bodily organization disposes to it; 2d.—that there is a certain something, a materies morbi, which accumulates within the body and which admits of change of place within, and removal from the body; 3d—that a fit of the gout tends to remove this peculiar matter, whatever its nature, from the system, either by the excretions or deposits in the parts affected. There is also unquestionably the closest connexion between the condition of the gouty habit and the functions of the kidneys and liver. Dr. Holland remarks, "without venturing to anti-date our future knowledge, by expressly defining the matter of gout to be either lithic acid, or urea, or one of the lithic or purpuric salts, or any other highly azotized principle, it is impossible

not to suppose that there is produced in the blood some animal principle having close kindred with these, and morbid either in kind or by excess—a matter in the separation of which the kidneys are largely concerned, and the retention of which in the system is the cause of various disorders, according to the age, sex, temperament, or other peculiarities of the person affected."

But leaving all theories for the present, and hoping that modern enquiry in the great field of organic chymistry, will speedily throw a light on many things concerning the exact nature of which we are confessedly in a state of darkness, let us lastly direct our attention to that which more nearly concerns both the practitioner and the patient, and endeavour to offer a few practical observations on the treatment of gout.

I have already stated the disease is not easy to eradicate, but by the administration of colchicum its severity may be much diminished. I have mentioned also that this medicine may be regarded as a specific in gout; for not only is its administration followed by a removal of the pain and inflammation of the affected joint, but it extends to the relief, and removal of the disease when present in parts differently composed, or when assuming the most irregular and changeable aspects; for example, it frequently at once removes that peculiar opthalmia present in gouty subjects, when other local and general remedies have been again and again used with little avail, and in every chronic variety of the complaint, the beneficial effects of colchicum are too obvious to be overlooked. And thus, as Dr. Holland well remarks, its power of removing gouty inflammation from the joints, is subordinate to its action on the matter of gout throughout the system, and it is "to the latter that we must look for an explanation of those effects which may thus be deemed specific in every first sense of them." This talented writer is also of opinion that colchicum exerts its peculiar influence upon the kidneys, at any rate that its influence upon them is better marked, and more considerable than on any other part, and he draws this conclusion from the fact of the intimate connexion between the gouty action and alteration or disorder in the secretion of the kidneys. We know on the highest authority, that the average quantity of solid contents passed in the urine in twenty-four hours amounts to nearly two ounces, and in all probability the separation of such matter is essential to health;

it is therefore easy to imagine the influence exerted on the system by alterations in this function, and the value of certain medicines which act directly upon it.

Dr. Cullen has judiciously laid down as indications of treatment in gout, "*to moderate the paroxysm and to prevent its recurrence.*" The rule of many gouty sufferers appears to be exactly the reverse, viz., *to hasten the paroxysm, and to increase its violence*, under the foolish idea that a severe attack expels from the system more gouty matter than a weak one. This doctrine is neither true, nor founded on experience; for, although, as already stated, an attack of gout, sometimes removes pre-existing constitutional derangement, the remark must be considered as only applying to the earlier seizures, and does not hold good generally, and the idea, that the quantity of gouty matter expelled, is in exact proportion to the severity of the fit, is equally erroneous. The remarks I have to offer on the treatment of gout are very few and simple. In a first attack, and in a constitution young and vigorous, there can be no doubt that the more the disease is treated on general principles, and the less it is looked upon as a specific, or hereditary complaint, the more effectual the relief, the more rapidly will recovery take place, and the more perfect will be the correction of that peculiar state of the system from which the attack has arisen. If then I am called to a patient suffering from gout, of a full habit, with a quick full pulse, hot skin, and loaded tongue, I am in the habit of treating the disease as if the fever and local inflammation arose from any other cause, viz., by bleeding, purging, and low diet, and these must be employed in proportion to the acuteness of the symptoms. I see no reason for supposing this plan of treatment contra-indicated by the existing local inflammation, on the contrary, the longer it continues, the greater will be the danger to the part—of disorganization, debility, or impeded motion of the joints. With regard to topical remedies, as the local inflammation has a tendency to subside, they are not required: it is very dangerous to apply cold to the part during an attack of gout, and when the experiment is tried, nothing is more common than for some internal organ to suffer; apoplexy may be induced, or disease of the heart, or violent gastrodynia; and, therefore, if any patient be so insane as to attempt to put the affected part into cold water, during an attack of gout, it is the

duty of his medical attendant to warn him of his danger. These remarks of course apply only to the most simple form of the disease; when it arises in a constitution naturally feeble, vitiated by other diseases, or *broken up* by repeated attacks of gout, a somewhat different plan of treatment must be resorted to, and on the accuracy with which the proper remedies for relief are adapted to the existing powers, and suited to the concomitant derangements of functions or structure will the ultimate success depend; by a plan of treatment, calculated to restore the disordered action of each impaired organ, should we carefully proceed to effect the restoration of the whole body to a healthy condition, and surely, this simple rule is more consonant with reason, than that plan of treatment, so common, which arises from the idea that certain symptoms are characteristic of gout, and which at once directs the application of some supposed specific in every case, without reference to the direct operation of the remedy, or the physiological changes its administration may produce.

With respect to colchicum, when the pulse is full and bounding, the skin hot and dry, and other symptoms present, denoting a high degree of fever and inflammation, blood-letting should always precede its use; but in feeble constitutions, where the arterial action is low, and the use of the lancet not indicated, colchicum may at once be given with the most perfect propriety, and with every prospect of affording immediate relief. "A full dose of colchicum," says Dr. Barlow, "purges copiously, allays pain, and lowers the pulse," and, he continues, "these effects are produced with greater certainty if the fulness of the circulation be previously reduced by blood-letting, and the mucous secretions of the intestines evacuated."—This advice is the offspring of considerable experience, and comes from a man who has been most careful to collect his information where alone it can be found, viz. at the bed-side of the patient; it is in truth the result, longioris ævi diligentia, and as such entitled to every respect. The reason Dr. Barlow advises the abstraction of blood, previous to the exhibition of colchicum in young and vigorous constitutions is obvious; colchicum only removes the fluid particles of the blood,—these are quickly re-produced, and therefore, the relief the exhibition affords, is of necessity greater and more permanent when preceeded by blood-letting, and in cases where bleeding is quite out of the

question, the patient frequently requires purging, before having recourse to colchicum. I at once admit that a full dose of colchicum given the moment an attack of gout comes on, will frequently diminish pain, and abate inflammation; but is this all we require? in our treatment of gout there is surely some other object to effect, than affording a momentary cessation from pain—we are not to combat symptoms, we must look to causes, and by restoring each secretion to a healthy condition, endeavour, 1st,—to remove the disease; 2d,—to prevent the occurrence of injury to the local parts, which are the seat of gout; and 3rd,—to prevent its return, or if this cannot be effected, to lengthen the period between each attack of it. Suppose then, we are called to a patient suffering from gout under circumstances somewhat different to these already pointed out; that is, to one who has many times being attacked with the disease, and who has several fits every year—I should give in such a case, if the symptoms were severe, a dose of blue pill, or calomel, at bed time, with James's powder. The skin should always be active, for it is an outlet for the discharge of excrementitious matter of the highest importance. The bowels must also be acted upon freely by saline aperients, the following morning, and then we ought after this evacuation of the intestinal canal, to commence the use of colchicum. And I would give it in the following form :—

℞ Tr. Sem. Colch., mlxxx; Magn. Sulphatis, ʒi; Magn. Carb., gr. x; Tr. Card. Co., ʒij; Aquæ Menth. Pip., ʒx. ft. haust. ter in die sum.
℞ Pil. Hydrarg., gr. v.; Pulv. Jacobi, [vera] gr. iv. h. s.

The next day, if the action of the colchicum is not very violent, it may be continued as before, or in smaller doses without the Magn. Sulph. If the gout is evidently on the decline, I should give on the third day, twenty drops of the Tr. of the seeds, morning and evening, in a saline draught, and five grains of blue pill at bed-time: in my opinion colchicum ought never to be given without it. Under this plan of treatment a mitigation of suffering is gradually produced; the pain moderates, the foot becomes swollen, then desquamates, there is much itching for some days, and then there is an end of the matter, at least for that time; but sooner or later, the same scene will be re-enacted, the intervals between each attack also become shorter and shorter, and the fits are of longer duration, unless the most strict attention be paid to diet and the state of the system.

We will suppose the plan of treatment already pointed out, to have been successful in a case of gout; the pain and swelling have disappeared, the patient feels quite well, and wishes to return to his usual avocations. Do the duties of the physician here cease, are his professional services no longer required? *I undoubtedly consider that much more is required than the mere removal of the disease from an affected joint, and that we ought not to leave our patient until some attempt has been made to remove the gouty matter from the constitution, and I fear that the eye in dwelling upon the inflamed toe, or the suffering ankle, is apt to become too microscopic to include the general state of the system within the range of vision. A few large doses of the the Tr. of the seeds of colchicum are frequently sufficient to remove gouty inflammation from an affected joint; but this is not all we require; enough, it is true, has been done to withdraw the local attack, but not enough to prevent a speedy return; a portion of the gouty matter has been filtered away by the action of the colchicum upon the kidneys, but the medicine must for some time be continued, if we wish to remove it altogether from the system, and I honestly think that this medicine may be made a preventive as well as a curative of gout.*

After the local inflammation has subsided, I recommend colchicum to be given in the following form:—

℞ Extracti Colchici Acet., gr. xij; Pil. Hydrarg., gr. xx; Ol. Menth. pip., ♏vi. M. in pilulas xij divide. Capiat i omni nocte.

℞ Infusi Chiraytæ, ʒiij; Potassii Iodidi, gr. iij; Tr. Card. Co., ʒi; Aquæ, ʒviij. M. ft. haustus ter in die sumendus.

Fifteen grains of the Potass. Bi-carb. every day, an hour before dinner.

Once or twice a week a saline aperient, with decoction of aloes, or Tr. Rhubarb will secure a due action of the bowels. I would not however, give up the exhibition of colchicum so soon, or limit its use to the twelve pills in the above prescription; if the gums become a little tender, the quantity of blue pill may be diminished and the extract given in the same doses for another fortnight. I have given it in *gout*, every night for nearly a month, in *rheumatism*, every night repeatedly, for six weeks and do not remember one case, in which it produced symptoms requiring its discontinuance. By this repeated use of colchicum, we not only have it in our power to *remove* an attack of local gouty inflammation, but also in a great measure to *remove* it, for a time at least, from the system.

Thus, by combining it with calomel and other purgatives at the commencement of an attack of gout, and with henbane or opium *(morphine)* in its more advanced stages, and with alkalies and mild bitters towards its decline, and for the prevention of its recurrence, we are furnished with nearly all that is required, as far as medicine is concerned. I have already remarked, and may again observe, that the kidneys are evidently the organs of the body upon the disordered, or inefficient action of which, the phenomena of gout depend. Each period of life exerts an important change on the secretion of urine, both in the nature and proportion of its several ingredients;* and it should be remembered that the decline of manhood is characterised by an excess of lithic acid which continues more or less through life; this discharge takes place with the most perfect safety, and often a large evacuation of this

* In the treatment of disease it is far too common a practice to direct attention to the removal of symptoms rather than to an examination of causes. Thus, medicines are often given to correct sediments in the urine, when their free, and abundant discharge, is relieving the system. Dr. Barlow remarks that "much profitless scrutiny has been devoted to the different impregnations, the specific gravity, and other properties of gouty urine. The main fact respecting it is that it contains what ought not to find its way into it, and the most effectual way of purifying it is to cut off the morbid supplies by regulating the diet and restoring due activity to the other excretories, for it is their deficiency which throws upon the kidneys so much extraordinary labour. Light diet, a free skin, and active bowels will clear the urine with little aid from chymical correctives. These are, no doubt, proper as adjuvants, where high degrees of acescency or of alkalescence prevail; but they are utterly inadequate for perfect corrections, and their use at best, if alone trusted to, is uncertain and short-lived. We have no evidence that when taken by the mouth they ever reach the bladder so as to act on the concretions deposited there. This truth the history of calculous complaints establishes. From the same source we learn that when acid calculi cease to be deposited in consequence of the free use of alkalies, if these be continued, alkaline depositions take place, and thus the evil is changed, not removed. Both in calculus and gout our belief is that more may be done in correcting the morbid state of urine, by re-establishing a healthy balance in the constituents of the blood, avoiding all excess of diet or stimulants, and keeping up an active state both of cuticular and intestinal excretion, than can ever be effected by neutralizing remedies. These should not be withheld, but from the circumstance before mentioned caution is required in their use, and at all events they should not, however efficient they may casually appear be suffered to supersede the far more effectual relief which rectifying the fundamental errors of the constitution is capable of affording."

substance with the urine, produces much relief, and when interrupted, becomes a source of grave and serious disease. I know a patient who has been a sufferer from gout for years, in whom the disease is seldom present when the urine contains a quantity of this discharge, but who often suffers when it is no longer present.

With regard to *diet* precise rules cannot be laid down for the regulation of every case; the rule of Sir Wm. Temple, (himself a great sufferer from gout) is perhaps the best. *Simple diet limited by every man's experience to his own easy digestion, and thereby proportioning, as near as well can be, the daily repairs to the daily decays of our wasting system.*" Perhaps the great difference of opinion that exists with regard to a sparingly azotized diet, arises from the fact, that it is for the most part only adopted by those whose digestive organs are broken down by long and *repeated* excesses, which lead to *repeated* attacks of gout. But I feel certain that if a young, and comparatively healthy man, be attacked with gout, however strong the hereditary predisposition, if he will vigorously adhere to a simple diet, *as little azotized as possible*, and will combine this with exercise, and other prophylactic measures, he may keep himself free from it. This was the case with the late Dr. Gregory, of Edinburgh, who often used to relate to his class the advantages of a close attention to diet, in his own case. By attention to diet, and exercise, he did not mean starvation on the one hand, and excessive exercise on the other. He was accustomed in proof of this, to appeal to his own person, the robust form, and fresh complexion of which, gave ample assurance of its being sufficiently nourished, and to conclude his remarks by saying, "you see gentlemen I am no starveling." The Doctor had a very serious attack of gout at an early period of life, and by a continued course of abstemious living, reached an advanced age without *experiencing any return.*

I will also remark that the disease is promoted by indulgence in wine. All fermented liquors do not appear to have the same effect, and have perhaps, even a tendency to prevent it. It appears quite evident that the patient should be very abstemious, living as low as he can to be in good health, and taking *as much exercise as he can bear.* It is foolish to lay down a rule, and to say,—a man attacked with gout must drink no wine, must drink no beer, must drink nothing but water, and eat no meat. We

may see two patients in one day:—the first, Mr. A., will derive benefit from leaving off all fermented liquors; the second, Mr. B. must have a certain quantity of wine, his stomach being too weak to digest his food without it, but with both, extreme temperance is required, no more wine, and no more meat must be received into the stomach than is absolutely required, and the exercise must be so regulated, that the supply does not exceed the daily waste of the body. With respect to the kinds of food: the more simple the better—such as fresh mutton plainly boiled or roasted, without any elaborate preparation or sauce; let them taste as mutton and beef, and not be so disguised by the talented *French-cook* of the establishment, as to render it quite impossible to discover of what, the delightful dish set before you, is composed. If wine be required, sherry and water is the best. All acescent wines (as champagne) should be carefully avoided: many persons are immediately attacked with gout, after taking Rhenish wines, or claret or champagne. Sherry for the most part agrees the best, and therefore I recommend it, unless the patient knows that some other wine suits him better; or a small quantity of brandy and water;—whiskey and water frequently agrees very well, and on the whole is preferable to sherry. I am here supposing, that from habit, or some other circumstance, the stomach of the patient requires such a plan to be adopted. Still I cannot conclude without most strongly advising every scion of a family, the members of which are liable to gout; every young nobleman, whose father was subject to it, when a severe attack occurs in early life, to endeavour, not only to get over the fit as soon as possible, but also to get rid of the disease altogether. I would advise the patient at once to give up wine, to live on the most simple food, to drink nothing but water, to remain as short a time in bed as possible, and by continued exercise and proper evacuations, take care that the balance of the system is not overturned, and the disease reproduced. If a man thus attacked, is at once resolved to eradicate the disease, I am certain, that it is in his power to do so. The most important part of the treatment of gout is the preventive: for if this, (however successfully the first paroxysm is relieved,) be not assiduously pursued, the disease will re-occur, and acquiring redoubled impetus by repetition, will not fail in the end, to inflict the usual penalties. The principles for the prevention of

gout are the same through all its stages and conditions, modified only by contingent eireumstances. Of eourse, in proportion as the general health beeomes broken, and the power of sustaining active treatment weakened, must gouty patients abate in their expeetations of a complete eure, and be content with a mitigation of their sufferings; *still much may be done* in the most extreme cases;—in all may fever be allayed, the bowels kept open, the skin perspirable; the diet regulated, and contingent derangements receive their appropriate treatment. In those wretched eases of extreme disorganization, and broken health, where no exereise can be taken, frietion is extremely useful, and should be used at least twice a day: all we ean hope for here, is but little, and too much ought not to be attempted; here colchienm is indeed a blessing, the value of whieh is inestimable, and gives more relief than any other drug with which we are aequainted.

Gout is evidently a disease of the rich and indolent, not of the poor labourer, who toils all day, lives on the most simple food, and whose

> "——————— sleep
> Is aery-light, from pure digestion bred,
> And temperate vapours bland."

It is the disease of indolence and repletion, and has a tendeney to destroy life, to cripple the joints, to make the existenee of the sufferer miserable; nor does the mischief end here; it passes on to his unfortunate children. There is an old saying in Seotland, "live on a shilling a day and earn it, and you will never have gout"—this is simply true, and ought to have had more influenee on medical opinions; had men refleeted on this simple fact how many lives would have been spared; nutrition would not then have been enjoined to keep up the strength, and wine would not have been given to keep the gout from the stomaeh. I repeat once more that the only effeetual preventive of gout is temperanee, and understand, *that by temperance I mean, that whatever is taken into the stomach beyond what the wants of nature require is excess, and that thousands commit this habitual murder without being aware of it;* for depend upon it, that if this exeess be continued, disease will sooner or later arise. All living bodies are endowed by nature with eertain determinate properties; men also are under eertain organie laws; if we obey them, the result is health, long life, and happiness; if they are violated, disease is

the inevitable consequence. If men will neither learn these laws, nor be guided by them when they are known, they must pay the penalty, must suffer for the crime, and doubtless they deserve the punishment; and as I write my memory recalls cases of *bloated dropsy—of livid asthma, struggling for breath—of tottering palsy—of yellow-faced jaundice—of red-eyed delirium—of limping gout, grinning with pain—of musing melancholy and incurable insanity;* and if a pupil asks me the causes of these fearful afflictions, I answer, they are too often the diseases of intemperance. Do I exaggerate the evils of improper food, of excessive indulgence in wine and ardent spirits? consult the experience of every practical physician.

"*Temperance*," says Burton, "is a bridle of gold, and he who can use it aright, is liker a god than a man."

"If you would be well," says Abernethy, "live on sixpence a day and earn it."

"The pith," says Dr. James Johnson, "of all that has been written on HYGIENE and the prevention of diseases—and of the Protean disorder among the rest—might be included under two heads, almost in two words—TEMPERANCE AND EXERCISE—we must keep the body active and the stomach empty."

Such are the opinions of men, whose education and experience, entitle them to respect; but this knowledge is not alone confined to the physician, all men know that luxurious feeding is injurious to health, and rigid temperance beneficial; all teachers have taught it, all experience proves it: "Επει τι," said Euripides hundreds of years ago,

"Επει τι δει βροτοισι πλην δυοιν μονοιν,
Δημητρος ακτης, πωματος θ' ὑδρηχοου."

2d. *Rheumatism.*—Of the diseases having affinity to gout there can be no doubt that acute *rheumatism* occupies a very conspicuous place, including both the fibrous and synovial varieties of this disorder, and what is generally termed rheumatic fever—like gout it is hereditary, of frequent and rapid translation from an affected joint to an internal organ, and there is also a peculiar disorder of the urinary secretions. Rheumatism is of two kinds, the *acute*, and the *chronic*. In the former we have heat, pain, and swelling of the joints: the wrists, shoulders, hips, and knees being more generally invaded. The parts are generally hot, and red, and the pain appears more acute in the theca of the ten-

dons, along which long red streaks may frequently be observed. There is usually a quick full pulse—the pulse is full and soft, not hard, but we are not to say there is no inflammation because the pulse is not hard; the tongue is white and coated, the urine high-coloured, depositing a *lacteritious* sediment. There is usually profuse sweating, and the perspired fluid has often a very disagreeable sour odour: when the disease subsides, the heat abates, the swelling gradually diminishes, but the parts do not desquamate as in gout. In the chronic, form the symptoms are the same as in the acute, only of a less violent character; there is generally no sweating, for after the disease has existed for a few weeks, the perspiration ceases. This much assists our diagnosis, for if there has been acute rheumatism, in the great majority of cases, there will have been sweating in the earlier stages.

"*Rheumatic gout*," Dr. Prout remarks, "when the *lactic* and lithic acids are developed together (as they may be and often are), the phenomena may be supposed to show that the mal-assimilation involves both the gelatinous and albuminous textures; and that the accompanying disease partakes of a mixed character; or, in fact, constitutes, what is not improperly termed rheumatic gout;—a form of disease which, as every one knows, is usually of a much more deep-seated and obstinate character, than either gout or rheumatism alone, according to these views therefore, the lactic and lithic acids considered with reference to rheumatism and gout, may be regarded somewhat in the light of *materies morborum*; or strictly speaking, the undue presence of the acids, in the urine, or elsewhere, in certain circumstances, may be viewed as indices of the existence of certain diseased actions going on in the primary tissues of the body, and which are known by the name of *rheumatic gout*."*

Treatment of Rheumatism—We must endeavour to remove inflammation and subdue fever. In its early stages acute rheumatism usually yields to bleeding, purging, salines with colchicum and antimony, and abstinence; but there are cases where these means, however actively employed, will not succeed in restoring the patient to health. After blood has been taken away, I usually order in two or three hours, a dose of calomel and James's Powder, and after this an aperient draught, so that the bowels may be thoroughly evacuated; the fever will then be much allayed, and the pulse quieted by the following mixture:—

℞ Tr. Sem. Colch., ʒj; Vin. Ant. Potass. Tart., ʒj; Tr. Digitalis, mxxiv; Syr. Tolutani, ʒij; Mist. Camph., ʒvss. Capiat coch. ij ampla 6tis horis.

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* Prout on Stomach and Urinary Diseases, 3rd Ed., page 210—11.

The extent to which depletion must be carried, and its repetition, will depend upon the activity of the disease, and the age and vigour of the patient, and the use of purgatives regulated by the state of the bowels; so long as the evacuations are dark and fœtid this must be continued. A dose of calomel and compound rhubarb pill every night, and an aperient draught every morning, will also be required. The diet should consist of barley water, or toast and water; during the inflammatory stage, meat and all fermented liquors must be withheld, it is no use to attempt to put out a fire, by throwing water upon it with the left, and fresh fuel with the right hand. This plan of treatment will succeed in the majority of cases, but now and then, as already stated, we meet with one that will not yield; however, men of the greatest experience are agreed, that the antiphlogistic plan of treatment is the only one that can be depended upon.

Chronic Rheumatism.—What I have said already of the treatment of acute, applies also to chronic rheumatism, if inflammation be present; when it is not, friction and the vapour bath will be particularly useful; but do not be too hasty in adopting the by far too general opinion that a chronic disease cannot be inflammatory. Cupping and leeches, followed by blisters, applied to a joint often are of great use; but in those inveterate cases that constantly occur in practice, no one remedy is to be relied on. The *Cannabis Indica*, or Indian Hemp is said to have been successful in certain cases of both acute and chronic rheumatism; but it was not tried until bleeding and antiphlogistic measures had been resorted to; I fear like too many new remedies this will prove no better than many other supposed specifics. The *Oleum Jecoris Aselli* (Cod liver oil) was first employed by Dr. Kay of the Manchester Infirmary, and is now strongly recommended by Dr. Bennett, in obstinate cases of gout and rheumatism. There is a great deal of iodine in the yellow and brown kinds of the oil, and hence, in all probability, their medicinal virtues. I have tried it as an external application, with some advantage; internally, in doses of half an ounce of the oil three times a day, without manifest advantage, still from what I read, of its use in Germany, and the Germans think before they give us their opinions, I am inclined to conclude that this, at the best, is only a doubtful remedy, but nevertheless one deserving a trial in severe and obstinate

cases. The medicine I have found most useful in chronic rheumatism, is the Hydriodate of Potash and the infusion of sarsaparilla.—Dr. Auburn uses it both in the acute and chronic forms of rheumatism, with great success. *Mercury* is also useful in chronic as well as in acute attacks of rheumatism, and nothing is more common, than, for those who have been suffering great pain, and particularly if the pain be more severe in the night, to receive no benefit, until they have undergone a course of mercury, and for them to lose all pain the moment the mouth becomes sore. When rheumatism affects the face, a full dose of stramonium given just at the commencement of the paroxysm, often acts like a charm, and prevents the attack.

When the heart becomes affected the most active treatment is required: large bleeding, calomel and opium, salines, and colchicum; but the heart may be attacked with a disease of a less acute character; the blood-vessels taking on that action which will ultimately lead to hyperthrophy. The disease must here be also combated with the same weapons—moderate bleedings, calomel and opium; but these must be employed with the greatest caution; the disease being of slow formation, and the changes produced, not of a nature to be rapidly removed. The affection yields very slowly, and it is only by the most steady perseverance, both on the part of the patient and the physician, that a favourable result can be hoped for.

When both local and general inflammation ceases, and the action of the heart continues inordinate, or is often very violently excited, a plaster of belladonna applied to the side is frequently the means of quieting the heart's motions.

Rheumatic gout, does not appear to shorten life, the first patient Dr. Hagarth saw with it, lived to the age of ninety-three. The treatment depends upon the state of the constitution; much relief is derived from the local application of leeches and repeated blisters, which tend to reduce the swelling and restore the flexibility of the affected parts. It may be necessary not only to blister each finger, but every joint separately; but, if in the end, the power of the hand be restored, the patient cannot regret the pain and inconvenience which has produced so rich a reward.

CHAPTER X.

DIET, AND THE DISORDERS OF DIGESTION.

The disease we are about to investigate is generally called indigestion, but I shall speak of it as a disorder of the digestive organs at large, because indigestion applies only to affections of the stomach, whereas this affection implicates the intestines as well as the stomach; and indeed all the organs concerned, not only in chylification, but also in excretion. The observations of Dr. Beaumont under the extraordinary facilities afforded him in the case of St. Martin, furnish us with some curious information relative to the digestibility of food. On a Canadian, who had two inches below the nipple, a permanent opening into his stomach produced by a gun-shot wound, he tried various experiments, the result of which I have collected and arranged in the following table:—

Table shewing the relative digestibility of certain kinds of food.

KIND OF FOOD.	HOURS.	MINUTES.	KIND OF FOOD.	HOURS.	MINUTES.
Venison steak, broiled	1	35	Cod fish *(cured dry)* boiled	2	0
Sucking pig, roasted	2	30	Flounder, fresh, fried	3	30
Lamb, fresh broiled	2	30	Salmon, salted, boiled	4	0
Beef steak, broiled	3	0	Oysters, fresh, raw	2	55
Mutton, fresh, broiled.....	3	0	Oysters, fresh, roasted....	3	15
Pork, broiled	3	15	Oysters, fresh, stewed	3	30
Veal, fresh, broiled.....	4	0	Oyster soup, boiled	3	30
Boiled beef, salted	4	15	Eggs, whipped, raw	1	30
Tripe, soused, boiled	1	0	Eggs, fresh, raw	2	0
Brains, boiled	1	45	Eggs, fresh, roasted	2	15
Liver of the ox, fresh boiled	2	0	Eggs, fresh, soft boiled....	3	0
Salmon, fresh, boiled	1	30	Eggs, fresh, hard boiled ..	3	30
——————— fried	1	30	Eggs, fresh, fried	3	30

Dr. Beaumont discovered also, that digestion is facilitated by minuteness of division and tenderness of fibre; and prevented by opposite qualities. Venison appears to be one of the most digestible substances, which he refers to its being divisible into fine shreds, or small particles; mutton and beef are also of easy digestion, and in general, lean meats are more wholesome than fat; mutton is more easily digested than veal, and brown and old flesh better than young meat. Dr. Robinson addicted himself to taking an emetic every evening, and found, that he brought up veal undigested, but when he dined on beef very little remained. SAUSAGES have sometimes acquired, by keeping, highly deleterious qualities, which Buchner ascribes to the presence of a peculiar fatty acid, which has been termed botulinic acid. BUTTER and CREAM (which is in fact butter, mixed with a proportion of caseum or whey) are both injurious to dyspeptics. The nutritive properties of MILK consist of butter caseum, and sugar of milk. Perhaps the phosphate of lime existing in milk renders it necessary as an aliment for young animals, inasmuch as it is necessary to the formation of bone. With the adult, milk frequently disagrees, and with most dyspeptics, is heavy and difficult of digestion; the reason of this may be ascribed to its oily constituent, for ass's milk, which contains little or no butter, usually agrees very well with such patients. CHEESE, more especially when toasted, is bad for dyspeptics; cheese consists of caseum or curd coagulated, and contains more or less butter. *Stilton cheese* is made from milk, to which cream is added; Cheshire and the best Gloucester, from unskimmed milk, and *Parmesan* and *Suffolk* cheeses from skim-milk. EGGS are highly nutritious, and when lightly boiled usually easy of digestion, the oil of the yoke renders it less easy of digestion than the white. The flesh of the CHICKEN is easily digested and very nutritious, and is often retained on the stomach when all other meats would be rejected. The flesh of the PARTRIDGE and PHEASANT, is darker, contains more osmazome, and is more stimulating and less digestible than that of the barn-door fowl. The flesh of the DUCK and GOOSE is generally firm, fat, and difficult of digestion. The flesh of the TURTLE, plainly dressed, is doubtless nutritious, but rich turtle soup is very apt to disorder the stomach. Those fish which abound in oily matter, as EELS and SALMON are the most nutritive and the least digestible; the most wholesome are the COD, HADDOCK, and SOLE, It must be remembered that rich sauces, melted butter, &c., are all obnoxious to the stomach, and must be strictly removed from the table of the invalid. SALMON, EELS, HERRINGS, and SPRATS are filled with oil, difficult of digestion, and quite unfit for the dyspeptic. LOBSTERS, CRABS, CRAY-FISH, PRAWNS and SHRIMPS are all difficult of digestion; OYSTERS seldom disagree. All kinds of BREAD when eaten new, are injurious to dyspeptics. BISCUIT often is preferable, and generally agrees remarkably well. PASTRY is highly prejudicial—"*all pastry is an abomination*," says Dr. Paris, "I verily believe that one half the cases of indigestion that occur after dinner parties may be traced to this cause." PEAS and BEANS are nutritious, but apt to occasion flatulence; the CHESNUT, says Dr. Pereira, "possesses considerable nutritive power, and in London is used

as food by the lower classes. Its sweetness, especially when roasted, indicates the presence of sugar. No oil can be obtained from it by pressure. In the raw state it is very difficult of digestion; it requires to be roasted to split the starch grains which it contains, and thereby to render them readily digestible. Dyspeptics should carefully avoid chesnuts, even in the cooked state." The ALMOND, WALNUT, HAZEL-NUT, COCOA-NUT, which all contain more or less oil, are each very difficult of digestion. The PEACH, NECTARINE, PLUMB, CHERRY, and APRICOT—all the stone fruits are difficult of digestion; Dr. Beaumont found that it required nearly two hours for the artificial digestion of the peach. Of *pomaceous* fruits, the PEAR is the best. When quite ripe the ORANGE is rarely inadmissible. The MELON, CUCUMBER, VEGETABLE-MARROW, all disagree with the dyspeptic. The POTATO, when matured and properly cooked, is highly nutritious and easily digested. The TURNIP is easily digested, but now and then creates flatulence: the CARROT is slightly nutritive, but contains a volatile oil apt to disagree with those suffering from dyspepsia. The young shoots of the ASPARAGUS are nutritious, and if eaten without melted butter are easily digested. The whole class of LEAVES and LEAF-STALKS, used in salads contain very little nourishment, and are apt to disorder the stomach. SPINACH usually relaxes the bowels, and the CABBAGE, CAULIFLOWER, BROCCOLI, and SAVOY should not be eaten by dyspeptics. I have already pointed out the injurious properties of pastry, I must again remark that the leaf stalks of RHUBARB are very objectionable in certain constitutions. "I have seen," says Dr. Prout, "well marked instances, in which an oxalate of lime, nephritic attack, has followed the free use of rhubarb, in the shape of tarts, particularly when the patient has been in the habit of drinking at the same time hard water."

SOFT WATER is always to be prefered to hard, because it is a better solvent of vegetable and animal matters, and again, the repeated ingestion of the saline constituents of hard water may in some diseases prove very injurious. TEA.—Much has been written, and yet great difference of opinion still exists, respecting the precise effects of this beverage upon the system; many of these may be referred to the water, the temperature at which it is taken, or the milk and sugar which are added. Weak tea is very refreshing, and seldom disagrees; it is also particularly valuable when we wish to remove a tendency to sleep. COFFEE is heating and stimulating, and often disorders the bowels. CHOCOLATE is very nutritious, and devoid of some of those properties which are said to render tea and coffee unwholesome: it is however, on account of the oil it contains difficult of digestion, and therefore unfit for dyspeptics. COCOA is astringent, and adapted for persons with relaxed bowels, it also contains little oil.

BEER.—"That beer is nutritive," remarks Dr. Pereira, "and *when* used in moderation, salubrious, can hardly be doubted. It proves a refreshing drink, and an agreeable and valuable stimulus, and support to those who have undergone much bodily fatigue. The poor labourer, who has repeatedly experienced its invigorating property, will by no means admit the truth of Dr. Franklin's assertion 'that a penny loaf and a pint of water yield more nourishment than

a pint of beer'. The hop operates as a tonic, and assists digestion." With respect to dyspeptics, beer, as well as all other fermented fluids, are almost certain to disagree. By them therefore its use should be carefully avoided. It is also very injurious to those having the lithic acid diathesis, and ought not to be taken by the plethoric, and such as have a tendency to apoplexy. The *ales* prepared for the India market are the best, as they contain no saccharine matter, and twice the usual proportion of hops. PORTER differs from ale in several important particulars; being made from *high dried*, or almost charred malt, the saccharine matter is destroyed by heat, and therefore, porter is better for dyspeptic and diabetic patients than ale. WINES.—In the chapter devoted to the consideration of *gout*, the least injurious wines have been described. Dr. Paris remarks,—"there exists no evidence to prove that a temperate use of good wine, when taken at seasonable hours, has ever proved injurious to healthy adults;" and it must be admitted that persons who have been accustomed to the temperate use of wine are likely to suffer, if their accustomed stimulus be taken away. The red wines contain extractive and colouring matters (derived from the grape) and are apt to disagree with some dyspeptics. By keeping, wine deposits bi-tartrate of potash and colouring and extractive matters, which are very apt to disagree with some patients; hence, old wines are to be taken in preference to new. Ardent SPIRITS are most decidedly injurious; but in some cases of dyspepsia very weak brandy and water may now and then be taken with advantage. SODA WATER, GINGER BEER, and effervescing LEMONADE, are refreshing and grateful beverages, though by distending the stomach with gaseous air, they must prove injurious to the process of digestion.

In the treatment of diseases, attention to diet is a point of considerable importanee, and in none more so than the non-febrile disorders of the digestive organs; and, even in the most perfeet health, how soon is disease invited by exeess in the quantity, as well as quality of food. In truth, attention to diet, to the kind and nature of food is the very alpha and omega of existenee, the thermometer of our being. In the above table I have endeavoured to point out, what experience informs us, are the best and most wholesome kinds of food; the thoughts that have suggested themselves to me in praetice have already been anticipated, and already most faithfully communieated, by Dr. James Johnson, Dr. Coombe, Dr. Southwood Smith, Dr. Holland, Dr. Paris, Dr. Wilson Philip, and Dr. Todd, in the Cyelopædia of Practical Medicine, and I cannot confer a greater benefit on the student, than by advising him to read them with the greatest attention.

With regard to taking food, the following simple rules are easily

remembered, and their importance will at once be admitted by every practical man; 1st.—Never sit down to dinner under a sense of fatigue. If you can enjoy half an hour's sleep before dinner, under such circumstances, so much the better. 2nd.—Dine from the most plainly cooked and simple food, and never allow the stomach to be sufficiently filled to occasion a sense of uneasy repletion. 3rd.—The rate of eating should be sufficiently slow to allow thorough mastication, and this will prevent that heavy sensation which follows the hasty swallowing of food. 4th.—Never indulge in violent exercise, either of body or mind, immediately after a full meal. There is another rule that must not be omitted—one that Mr. Abernethy used repeatedly to dwell upon:—that the stomach should have time to perform one task, before another was commenced, and he always advised his patients to interpose not less than six hours between each meal. This is a good plan, it allows three or four hours for the stomach to digest the food it has received; and one or two hours respite from labour. But as this distinguished member of our profession said again and again "we preach in vain on these topics; no person can be persuaded to pay attention to his digestive organs, until death or the fear of death is staring him in the face."

"Sera nimis vit' est crastina viv' hodie."

Dr. Watson gives us a very faithful sketch of the system of too many in his valuable lectures:—

"I have now in my mind a family consisting of a mother and three grown-up daughters, who are continually ailing and valetudinary. They profess to have great respect for my professional advice: yet I never can induce them to think that their plan of eating is a bad one. They are not early risers. They get to breakfast about half after ten, or eleven. At two they think it absolutely necessary to eat luncheon, which consists of a mutton chop, or some hashed meat, with vegetables. At six they dine: and at eight they drink tea: and then they eat no more till the next breakfast. And this is just a picture of the habits of scores of families. They huddle all their food into the stomach, at four periods, within seven or eight hours; and leave it idle for sixteen or seventeen."

It is not my intention to describe the various symptoms of dyspepsia, but may remark that certain diseases of the viscera and thorax are not unfrequently induced by mere indigestion. Irregularities of the pulse, palpitation of the heart, fits of asthma, are, by no means, uncommon accompaniments of the disorders of digestion; and this fact may be attributed partly to the reflex sym-

pathy between the parts concerned, and partly to flatulence, which prevents the descent of the diaphragm and impedes the action of the heart and lungs. In such a state of things the patient is continually tormented with the thoughts of organic disease, and we have to fight against *hypochondriasis*, one of the worst of the concomitants of dyspepsia; I seldom see a case of dyspepsia, of long standing, without this species of insanity. The disease is well described by Cullen:—

"*Dyspepsia*—cum langnore, mœstitia, et metu, ex causis non æquis," and he continues—"In certain persons there is a state of mind distinguished by the concurrence of the following circumstances. A languor, listlessness, or want of resolution and activity with respect to all undertakings: a disposition to seriousness, sadness, and timidity: as to all future events, an apprehension of the worst or most unhappy state of them: and therefore, often upon slight grounds, an apprehension of great evil. Such persons are particularly attentive to the state of their own health, to even the smallest change of feeling in their bodies: and from any unusual feeling perhaps of the slightest kind, they apprehend great danger, and even death itself. In respect to all these feelings and apprehensions there is commonly the most obstinate belief and persuasion."

Dr. Abercromby says that in cases of indigestion, pain in the stomach occurs under four different forms. In the *first*, pain is felt when the stomach is empty, and the patient is comforted and relieved when food is taken. This pain appears to be produced by some acrimony of the fluids of the stomach, and is often at once removed, by a little liquid magnesia, camphor mixture, and aromatic spirit of ammonia. In the *second* variety the pain comes on in violent paroxysms (the intervals between which are uncertain) it is properly called gastrodynia, and often very untractable. Dr. Abercromby has found the most effectual relief from a strong purgative enema, and a mustard poultice laid upon the epigastrium; opium is sometimes of use, but in many cases under my care, I have experienced the greatest advantage from hydrocyanic acid. A *third* form of pain of the stomach does not commence until food has been taken three or four hours, and this is the most common kind of the complaint. The pain may sometimes be prevented by the following draught, given immediately after dinner:—

℞ Potass. Bi-carbonatis, gr. xx; Spir. Ammon. Ar., ♏xxx; Tr. Zingiberis, ʒi; Mist. Camph., ʒx. M.

In addition to this, I am in the habit of giving every night a combination of aloes and sulphate of iron, and during the day, bismuth and rhubarb; this is a valuable remedy in certain forms

of gastric distress, and quite useless in others, which accounts for the different opinions formed of its virtues by different practitioners. I fancy the failure is to be attributed more to the improper selection of cases than to the remedy. The *last* variety of this painful affection comes on as soon as food is taken, and continues during the whole process of digestion, until vomiting ensues, which gives instant ease. These cases arise from chronic inflammation, or some morbid sensibility of the lining coats of the stomach, and require to be treated as such. Dr. James Johnson has found small doses of the nitrate of silver very serviceable, and in a case recently under my care, it was of singular avail. A person named Quiball, residing at Newark, had long suffered from this peculiar form of dyspepsia, and had consulted various physicians, but without benefit. I had been reading Dr. Johnson's remarks the morning he called, and resolved to give the nitrate of silver a trial. I began with ¼ of a grain twice a day, gradually increased to ½ a grain three times daily, and in six weeks the man was well. In another case (a female) the disease had existed for many years; here after the application of leeches to the epigastrium, every other day for a fortnight, and then a blister, I made use of this remedy, increasing it to a grain three times a day; the result was highly satisfactory. I am now in the habit of using it every week, and have every reason to recommend it most strongly. Dr. William Hunter, however, has laid down the grand principle on which to treat all cases of chronic vomiting, not dependent upon disease in other parts—viz. to reduce the quantity of food to that amount, whatever it may be, that the stomach is able and willing to bear, and to make its quality as bland and as nutritious as possible.

I am well aware that these are but imperfect hints on the treatment of this important class of disorders, they, however, contain the principles on which disorders of digestion are to be managed. States of mind, and habits of body, such as mental trial, mental distress and solicitude, much study, want of exercise, exert a marked sway over the functions of the digestive organs; and our task is the most difficult when the patient's anxiety relates to his own complaints; when the mind dwells only on his state of health, and he continually tells you his recovery is hopeless. If you say to him, his ailments are imaginary, he laughs in your face, deserts you, and

places himself under the care of some abominable, villainous quack, who fleeces his pocket, and ruins his health, by the continued use of purgatives, the injurious effects of which I have already pointed out [page 13]. If we can obtain the confidence of such a one, much is already gained; get him to "*travel in search of health,*" for a time to forget his business—to forget himself; keep the mind ever engaged, and the eye ever resting on some new scene; thus, six weeks spent among the mountains of Switzerland, or upon the rivers of Germany, or in travelling through any pleasant part of our lovely island, will often do more in bringing the dyspeptic hypochondriac, to a state of health than an eternity of physicing and dieting at home: "you cannot minister to a mind diseased, throw physic to the dogs."

But these principles require to be understood, not only by the physician, but by the patient also; they are of practical importance in the care of every man's health, and in preventing the pernicious mis-representations and mal-practices of ignorant, crafty, and designing charlatans; and upon whom is it that the contemptible empiries of the present day live and fatten, while their terrified and poisoned victims, quailing under their grimaces, and swallowing their compounds, totter to an untimely grave? It is to the lamentable ignorance even of persons of education with respect to the structure and functions of the human body, and every thing relating to health and disease, that we must ascribe the mischief we so frequently witness. But, thanks to the increasing diffusion of physiological knowledge—the age of farce is almost gone—the mist of delusion is fast fading away, and we discover the first general dawning of the human mind. The days of the NECROMANCERS—EXORCISTS and WIZARDS—of the POWDER OF SYMPATHY—the ELECTUARY OF THE THREE DEVILS—the PLASTER OF THE HAND OF GOD—the ELIXIR OF LIFE—the IMMORTAL CATHOLICON—and numerous other infallible remedies of former times have long been past—let us hope, those also of the ST. JOHN LONGS—of the BALM OF GILEAD, the REAL BLESSING TO MOTHERS—MORRISON'S and PARR'S PILLS are also numbered, and that for the future we shall be permitted to live without groundless apprehension, till we reach the winter of old age, and at last to die a natural and peaceful death.

THE END.

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SOME TIGHT

GUTTERS